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ABSTRACT

This document, a review of financing postsecondary education in Washington, emphasizes the need for the users of postsecondary education and the state to carry most of the financial burden and provides a cost-benefit analysis, information on pricing and student aid, current practices in state financing, and data on student loans. Options for Washington State include: (1) make the present system more equitable and effective in providing wide access by directing added funds to student financial aid and establishing an effective student loan program; (2) move to full-cost pricing, with massive financial aid to needy students; (3) move part of the way toward full-cost pricing, with necessary accompanying student aid; and (4) adopt a variable pricing system that reflects differences in instructional costs, either by program or by level. (Author/MJM)

Council on Higher Education

State of Washington

CHE

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Financing Post-Secondary Education in Washington

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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1972

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FINANCING POST-SECONDARY EDUCATION
IN WASHINGTON

A Report to the
Council on Higher Education
State of Washington

by the
Academy for Educational Development

September, 1972

Project Staff:

Robert R. Hind, Director
Richard A. Dent
James R. Glenn, Jr.
Kurt D. Moses

Consultant Panel:

William B. Cannon...Vice President for Special Programs
University of Chicago
Earl F. Cheit.......Professor, Graduate School of Business
University of California
Alvin C. Eurich.....President
Academy for Educational Development
Joseph A. Kershaw...Provost
Williams College

AED, 770 Welch Road, Suite 453, Palo Alto, California 94304

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ACADEMY FOR EDUCATIONAL DEVELOPMENT, INC
a nonprofit planning organization

September, 1972

Mr. James Furman
Executive Coordinator
Council on Higher Education
State of Washington
Olympia, Washington 98504

Dear Mr. Furman:

We are pleased to submit this report, Financing Post-Secondary Education in Washington, in partial fulfillment of our letter of understanding dated October 20, 1971, and subsequent addenda.

The study which led to this report involved many people and we would like to extend our thanks to them. They include the presidents of the universities and four-year colleges, who were good enough to take time from their busy schedules to give us their ideas on financing problems; the many institutional officers concerned with finance and student aid who shared with us their problems and concerns; and the state agency officials who provided insights into financing problems from many viewpoints. Special gratitude is due to the staff of the Council on Higher Education, who responded patiently and helpfully to our requests for data, and who conscientiously reviewed and critiqued our early drafts. All of these people contributed, but non is accountable for the findings in the report. For these we take full responsibility.

A panel of highly qualified economists and educators guided and assisted us throughout the study. Their counsel was invaluable. Yet it should be made clear that there was no attempt to achieve consensus among them. Although they reviewed and commented on the body of the report, and contributed to the accuracy of the technical analyses, the findings and conclusions are those of the study staff; the appendices are entirely the responsibility of our staff.

We hope that the report proves to be of value to the State of Washington in dealing with the complex and difficult problems of educational finance.

Sincerely,

Robert Hind
Director
Western Region

RH:gb

PALO ALTO OFFICE: 770 WELCH ROAD, PALO ALTO, CALIFORNIA 94304 (415) 327-2270

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REPORT SUMMARY

SECTION 1 - Increased funding will be required in the coming decade to accommodate the demands of increasing enrollments of college age and older students. Added funds will have to come from within the state, in the near future, since philanthropic dollars are unlikely to grow, and substantial increases in federal funds are several years off. The state itself, and users of the system, must carry most of the burden.

SECTION 2 - Cost-benefit analysis is of limited utility in determining who should pay for post-secondary education. Clearly there are societal benefits, for which society should pay; there are also benefits to participating individuals for which they might be expected to pay. But there is no agreement on how to strike a balance. Although cost-benefit analysis does not provide us with the easy answers, it does highlight the major option open to decision-makers: determination of how much students should pay, with the understanding that society pays the rest.

SECTION 3 - Pricing -- tuition charges and student aid -- then, can be looked upon as the major variables. Low tuition is the traditional method of assuring wide access to post-secondary education, but the device has not worked to open opportunity equally to all. Full cost pricing, if coupled with need-based student aid, can maximize access, but might be highly disruptive for many middle income students.

SECTION 4 - The various states have adopted, or are considering, a number of different approaches to coping with their financing problems. The differences seem in part to reflect variations in public-private balance, tradition, and goals. They provide a variety of models to be considered and watched.

SECTION 5 - Student loans provide an increasingly attractive aid device, regardless of the selected financing pattern. Washington could operate a direct loan program, underwrite student loans under a guarantee program, or adopt a program with the major features of deferred tuition plans under which borrowers repay in proportion to their earnings after leaving college.

SECTION 6 - The major financing options now open to Washington, if it wishes to achieve the goals of high quality, accessibility, equity, and responsiveness to state needs, include:

1. Make the present system more equitable and effective in providing wide access by directing added funds to student financial aid and establishing an effective student loan program.
2. Move to full cost pricing, with massive financial aid to needy students.
3. Move part of the way toward full cost pricing, with necessary accompanying student aid.
4. Adopt a variable pricing system which reflects differences in instructional costs, either by program, or by level.

Selection of one or more of these options is sure to be influenced by the effect of 1972 federal legislation, which provides for basic grants to needy students of $1400 per year, with the promise of up to $1000 in added grants for disadvantaged students. Although the full funding that will permit top grant payments may be some years off, any progress toward full funding is likely to push states to charge fees that will raise student costs to levels high enough to draw the maximum federal subsidy. Such subsidies, one way or another, will shift a part of the cost burden from the state to the federal government.

FINANCING POST-SECONDARY EDUCATION
IN WASHINGTON

1. INTRODUCTION

The financial plight of post-secondary education in the United States has been the subject of many reports and essays, and several intensive studies.* The findings add up to a simple conclusion: costs at colleges and universities are rising more rapidly than income, and new solutions must be found if expanding and changing needs are to be met.

The State of Washington enjoys no immunity from this national problem, and indeed the pinch here has been made more acute by recent economic setbacks. Yet Washington is in a good position to deal with its educational problems, having built a strong system of post-secondary education responsive to the diverse needs of its people. This report endeavors to analyze some of the existing financial problems, to present alternative solutions, and to explore the consequences of some of the options that are open to the state.

Point of Departure

Before exploring alternatives for the future, it is important to establish where we are, where we would like to be, and what forces beyond our control are likely to bear upon us. We will examine each of these questions briefly.

The Post-Secondary System

The accompanying table provides an enrollment profile of the colleges and universities in the State of Washington. These institutions comprise a diverse system, well tailored to the differing needs of the citizenry. The two state universities carry the major burden of research and graduate training, and enroll a quarter of the undergraduates as well. The four state colleges and the eleven private institutions provide a wide range of options for undergraduates, and offer opportunities for graduate work in professional fields. The twenty-seven community colleges (with the added contribution of five vocational-technical schools) constitute a well-distributed and diverse system of institutions providing for entry into academic fields and vocational programs, with the options for lateral movement kept open.

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*Notably Earl Cheit's study for the Carnegie Commission, The New Depression in Higher Education, which found over three-fourths of the institutions studied to be "headed for trouble" or "in trouble" financially, and the Jellema Report of the American Association of Colleges which found that nearly one-fourth of the 407 private institutions studied were within a year of exhausting their liquid assets.

Table 1

FTE ENROLLMENT BY INSTITUTION
FALL 1971

Institution	Undergraduate*	Graduate	Total	Percent of System	Percent** Non-Residents
2 Public Universities	35,895	11,916	47,811	29.6%	16.0%
4 Public Colleges	24,214	1,802	26,016	16.1%	5.8%
All Public 4 Year Institution	60,109	13,718	73,827	45.7%	12.5%
Community Colleges	68,081	--	68,081	42.3%	4.1%
All Public Institutions	128,190	13,718	141,908	88.0%	7.9%
Private 4 Year Institution	17,138	2,085	19,223	12.0%	39.3%
Total System	145,328	15,803	161,044	100.0%	11.3%

* Includes the category of "Other"-non-matriculated students (468 FTE students in entire system).
** Percent Non-Residents is based on head count enrollment data. All other figures specify FTE enrollments.

The graph tracing enrollment growth in the various segments reveals something of the dynamics of the system. As in most western states, the private institutions enroll a small fraction of the total.* But this fraction, now at 12 percent,

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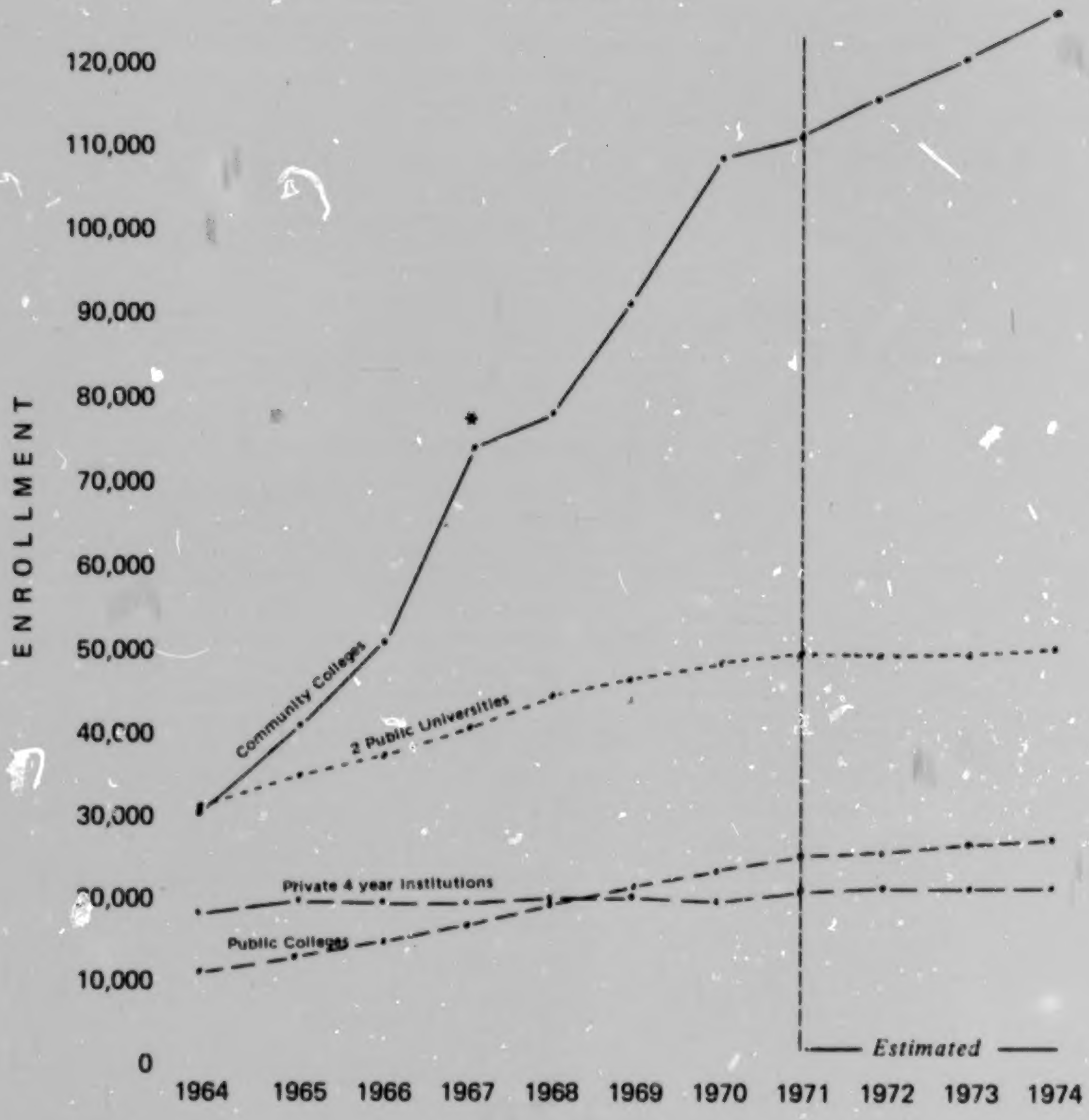
*This contrasts with the situation in most eastern states, where private enrollments are proportionately higher. An extreme case is Massachusetts, with 1970 enrollments of 182,000 in private institutions and only 87,000 in public ones.

Graph 1

ENROLLMENT BY INSTITUTIONAL TYPE
HEADCOUNT, FALL TERM
(1964–1974)



* 1967, Community Colleges became an independent system and integrated numerous vocational technical institutes

has been declining as private enrollments remained stable over the past decade while the public sector grew rapidly. This shift is in part the result of the widening gap between student charges at private and state institutions. As a consequence, the private institutions collectively are now some 6,000 short of the number of students they could enroll with existing facilities. Maintaining a strong private sector is important to the state both quantitatively and qualitatively:

the number of students enrolled is relatively small, but if they were to be shifted to state institutions it would seriously upset the state budget; the variety of programs and styles of the private colleges and universities increase the likelihood that all Washington students can attend institutions that fit their special needs and tastes. A program to aid these institutions has been initiated through state grants of $100 per resident student, and the effect of various alternative financing plans on the continued well-being of the private sector must be considered.*

Beyond this formal, or "core" system of post-secondary education, there are many other programs and institutions, sometimes identified collectively as the "peripheral" system: proprietary schools, business and government programs, correspondence courses, adult programs offered by the core system, anti-poverty programs, community schools, television, etc. Adequate data on this periphery are simply not available, either on the state or national level, and it is not encompassed by our study. Nevertheless the peripheral system is vitally important in assessing educational needs, since some studies project enrollments in the periphery far exceeding those in the core.** Careful consideration must be given to these alternative forms of education in planning for the future, even though the subject of their financing is not here at issue.

Goals

There is no officially adopted statement of goals for post-secondary education in Washington, but legislative action, constitutional provisions and statements of educational leaders converge to suggest an implicit set of goals for the system. These sources warrant the inference that Washington wants a higher education system characterized by:

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*For a full discussion of this topic see the Council of Higher Education report, Washington Private Higher Education: Its Future and the Public's Interest, November, 1970

**Moses, Stanley The Learning Force, Syracuse University, 1971. This analysis estimates a nationwide enrollment of over 60 million in periphery programs in 1970, and predicts over 80 million by 1975. This contrasts with a current enrollment of about 8 million in regular post-secondary programs. It should be borne in mind, of course, that many of these 60 million are enrolled in but a single course; while the regular enrollments reflect something closer to full-time students.

1. Accessibility, for all citizens who can benefit from post-secondary education, to programs that accommodate their particular needs and talents;

2. Equity, both as to access, by facilitating participation and equality of opportunity; and in apportioning the costs among users and taxpayers;

3. Responsiveness, to the particular needs of individuals and to the state's requirements for talent and service;

4. High Quality, to be achieved in part through diversity, autonomy and accountability.

Furthermore, we infer that the system should work toward these goals with maximum efficiency and effectiveness, terms often misunderstood when applied to education, but by which we mean a maximal ratio between benefits and costs.

We assume the above to be accepted central goals and criteria for higher education in Washington in our assessment of financing alternatives.

Future Enrollments

The most significant element that affects cost, and one that lies in part beyond the control of educational managers, is enrollment change. As the graph on Page 3 indicates, Washington should expect modest enrollment growth in the coming decade as a result of several factors.

The first is a slight increase in the numbers of persons of normal college age in the state's population. Those who reached college age between 1962 and 1966 numbered about 47,000 annually. This figure jumped to an average of 62,000 between 1967 and 1971. Over the coming ten years it will average 68,000 barring any major in or out migration -- a modest increase compared with the earlier jump. Through the 1980's, and perhaps beyond, there will be little growth in this population segment.

The second factor is the proportion of the college-age group which elects to go to college. Projections indicate that the proportion attending traditional four-year programs will not increase significantly but that increasing numbers will be entering predominantly two-year, vocationally oriented programs. Such a shift has important implications for the community college system and in any effort to differentiate student charges by level or by program.

Third is the likelihood that more people beyond traditional college age will come into the system for retraining and upgrading as technological change continues to affect employment needs; and to take advantage of a broad range of educational opportunities as leisure time increases.

The final major factor is the influence of policies and programs instituted by the state and the system as they move toward fulfilling the goals of access and equity. If aid and recruitment programs are expanded, naturally we can anticipate enrollment increases.

The number and complexity of these variables makes forecasting risky. The projections presented on Page 3 are the best guess as to what will happen, made by the staff of the Council on Higher Education. They indicate that new and enlarged programs will place increased demands on the state's financial resources.

Fund Demands

Operating funds will have to be increased at roughly the rate of enrollment growth, plus a factor for rising costs; some economies in operation might be made, as we discuss further below, to offset rising operating costs.

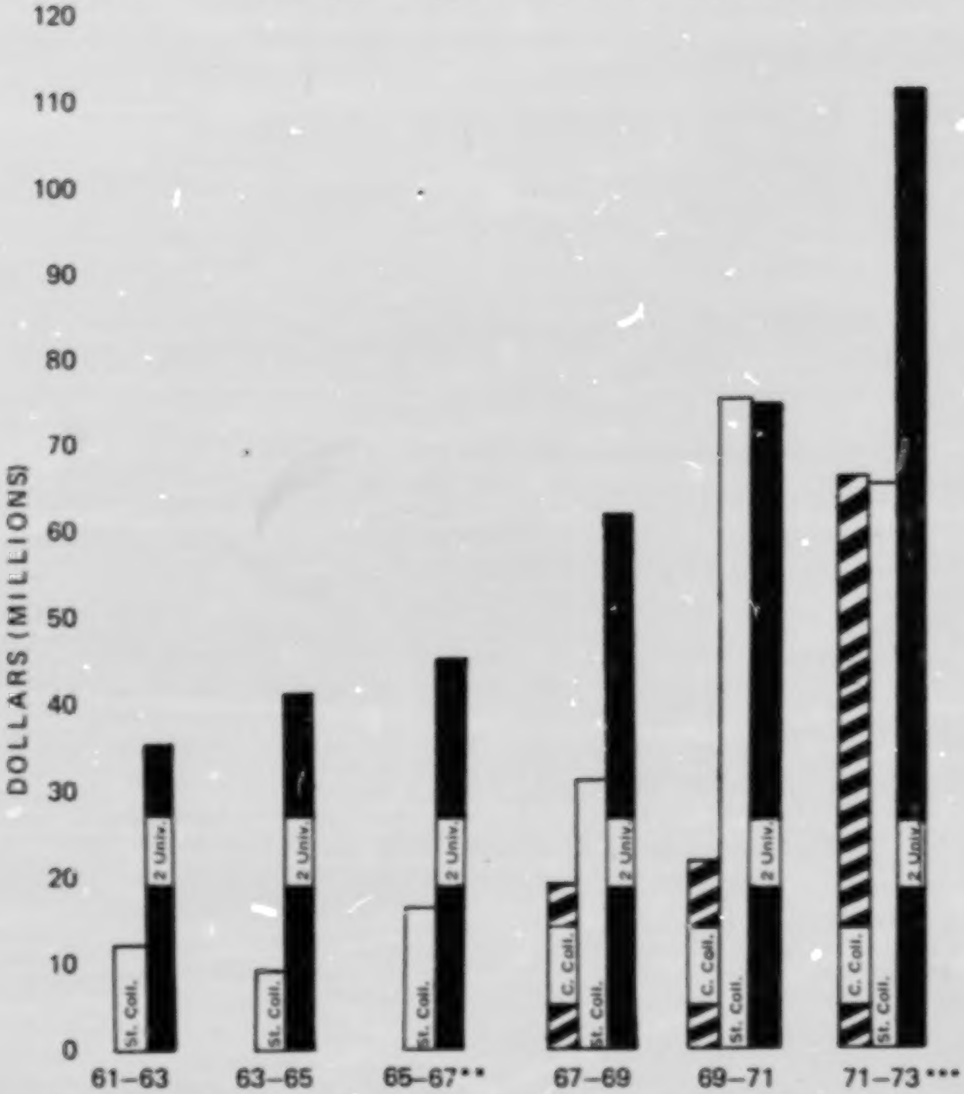
In the area of capital costs, we anticipate that the need will be somewhat below the rates of expenditure in recent years, which is shown in the accompanying graph. Major needs will be for construction on newly established campuses, to remedy some imbalances, and to provide new or replacement facilities for fields undergoing rapid change or expansion. Serving the needs of more adult and part-time students may call for new kinds of facilities in different kinds of locations.

Offsets to increases in capital needs may be found in at least three ways. First, policies aimed at increasing enrollments in unfilled independent colleges and universities can reduce the need for added space in state institutions. Secondly, leased or improvised facilities could be substituted for regular campus construction in many areas. And third, if

Graph 2

CAPITAL EXPENDITURES*

Washington Public Post-Secondary Institutions



* Includes both State appropriated funds and non-appropriated local funds. State appropriated funds have constituted approximately ½ of all capital expenditures for both the two universities and the state colleges.

** Data for community college expenditures not available for pre-1967.

*** 71-73 figures include new appropriations, estimated expenditures, and appropriations from the previous budget period.

a significant portion of the enrollment increase occurs among adult students who are best served by weekend and evening courses, the rate of utilization of present facilities can be increased, obviating the need for much new construction.

In summary, higher education will require increased funding in the coming decade as it expands its range of services. The rate of increase will not be as great as that of the sixties, since the enrollment boom has slowed, but it will be substantial. Our next step is to explore the sources of money for higher education in a search for the best ways to meet present and future needs.

Sources of Funding

Post-secondary education draws its current support from only a few principal sources: the users of its services, state government, the federal government, and philanthropy.* Charges to users are subject to both economic limitations and philosophic views, and these will be discussed more fully below. The contributions of federal and philanthropic sources are beyond the control of the state government, which thus has residual responsibility for the care and feeding of the system. Yet when the state feels a pinch in providing support for institutions, there is a temptation to look to these external sources for relief. For this reason we have included, in an appendix, reviews of the prospects for federal and philanthropic support.

New federal higher education legislation promises a substantial increase in support for post-secondary education. Its full implementation will produce major changes in financing patterns which must be taken into account in state planning. But as the review in Appendix 2 reports, it is unlikely that its full effect will be felt for several years. The time lapse between authorization of programs and major funding can be considerable. Until 1974 or 1975 the states will probably have to depend upon other sources, with added help only in such acute problem areas as instructional programs in the health services and occupational education, and in student aid. New student aid provisions will fundamentally affect financing patterns as they are funded, and this matter is discussed further in later sections.

Appendix 3 lays to rest the likelihood of major help from national foundations, except for limited innovative programs. Washington's private institutions, in particular, have received important support from individual, business, and foundation philanthropy, and this flow of resources must be encouraged. It should continue to grow at a modest rate, tempered by fluctuations in the economy. For the public institutions, the national foundations can be a source of short-term support for creative ideas in instruction and student support. But from the standpoint of state budget planners, philanthropy is not likely to be an important source of increased support.

Thus it seems apparent that, at least for the next few years, the solution to financial problems will have to be sought within the state's borders, and if present patterns are continued, the bulk of the burden will fall upon the state itself.

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*In some states, but not in Washington, local counties and districts also provide significant support.

Placing an increased burden on the state is more easily said than done. Washington is already stretching itself in its support of post-secondary education, and increases in state revenue do not appear likely.

Users of the system constitute another potential source of increased revenues. There are basically two types of users: students, who obtain formal instructional services; and others who receive a wide range of services including such diverse activities as basic and applied research, studies, consultation, data accumulation and analysis, and entertainment. Systematic data on policies and practices in these public service areas are not now available, but it appears likely that full cost is not being charged for all such services. Careful analysis of costs, and adoption of a full-pricing policy seems legitimate and fair, and could generate some additional operating revenues.

New data on students' ability to pay, as well as support needs for those less able to pay, has recently become available through a student resources survey conducted by the College Entrance Examination Board in tandem with this study of financing. It tells us some remarkable things about the tenacity and resourcefulness of students who want to get an education. Some 28 percent of all 1971-72 students in Washington show a deficit between their resources (including any grants or loans) and the cost of their education. The median deficit was $635, and it would cost the state $36 million to close this gap for all students with grants. Yet these students were in school, and all but 3 percent intended to continue.

Despite this persistence, the shortage of aid funds must be remedied if universal access is to be achieved. To have only 3 percent dropping out may be reassuring, but it suggests there may be many others who never came in.

Examination of the other end of the scale suggests that many students could pay more for their education. The reciprocal of the above deficit statistic tells us that 72 percent are covering their costs. With 18.5 percent of community college students and 26.8 percent of public four-year institution students coming from families with incomes of over $18,000 per year, there would appear to be untapped ability to pay.

Any increase in student payments would have to be accompanied by increased aid for those already below, or who would drop below, the deficit point. Loans would also help to cushion the shock for all, and they have been rather modestly used according to the survey. Only a fourth of students have borrowed at some time for their education, and fewer than 5 percent have outstanding loans of as much as $2500.

The Major Options

Finding solutions to the state's post-secondary education financing problems is not a simple matter. Everyone has a stake in the system, and solutions will be found only if all who are directly concerned work at it -- state officials, administrative officers, faculty, and students as well.

The solutions will be found among relatively few options, applied singly and in combination. Some of the major options are:

1. Modify Existing Goals - The state could attempt to alter its goals for post-secondary education by limiting access or modifying the character of its programs. Cutting current services and limiting expansion would cut costs, but at the expense of full development of manpower potential. We assume that such a course of action is unacceptable as a solution to current fiscal problems.

2. Increase State Appropriations - Washington is already providing substantially to its post-secondary system -- it ranks twelfth nationally in proportion of per capita income spent for this purpose. The recent economic slump has forced cuts in education budgets. The state could, and probably should, increase its support in key areas such as student aid, but without tax reform or a major economic upturn it is doubtful that general fund appropriation increases alone can solve the growing financial problem.

3. Borrow for Operating Funds Through State Bonding - We conclude that this is an unlikely solution because of constitutional restrictions and unwillingness to mortgage the future of the state to meet current operating needs. An expanded student loan program could, however, produce a similar economic effect by shifting the burden to the future earnings of present students. This option is discussed at some length in Section 4.

4. Increase Productivity - We are convinced that there are ways to make important savings, and to slow cost increases, without reducing quality through uses of new instructional arrangements, organizational patterns, and technologies.

These are not, strictly speaking, financial solutions, so they are discussed in detail only in Appendix 4. Such self-help solutions are a moral responsibility of college and university personnel if they expect to receive increased support from taxpayers or students and parents. We would like to call particular attention to the suggestion in that appendix that the state provide financial incentives to institutions to increase their productivity.

5. Shifting More of the Cost to Users - Many of those now making use of the higher education system can afford to pay a larger share of the cost of the services they are receiving. In the area of public service, there can be little argument with the notion of full-cost pricing. In the instructional realm, increases can come from current student and family assets or earnings, or from future student earnings through the use of loans.

At the same time, equity, as well as the state's social purposes, mandate a student financial aid program which not only protects low income students from increased costs, but which channels more funds than at present into subsidization of economically and socially disadvantaged students. Middle income students as well would have to be protected against the shock of increased costs if they are not to be forced out of the system; a subsidized loan program with reasonable interest and repayment provisions is one device for achieving this end. Much of the rest of this report deals with methods of shifting the burden of instructional costs in an equitable fashion.

2. CUI BONO

Literally, "to whose advantage", cui bono is used primarily in the law to suggest that responsibility for an action lies with one who has something to gain from it. It is a concept that helps us focus on one kind of "cost-benefit" analysis in education: who benefits most from the various activities carried on by colleges and universities, private citizens or the population as a whole? And what can the answer to such questions suggest about who should pay?

Institutional Costs

Before embarking on a review of the argument that has swirled around these questions, we would like to clarify terms by defining the cost elements attributable to institutions of higher education. The principal costs related to the central functions of discovery, preservation and dissemination of knowledge and skills are:

1. Instructional Costs - All those costs directly attributable to instruction and student counseling, including the appropriate share of the cost of faculty, libraries, administration, professional services, clerical support, etc.; and maintenance and rent (or its equivalent) of facilities used for instruction.

2. Auxiliary Services - Non-instructional services to students such as health service, student activities; plus the net operating costs of dormitories, food service, bookstores, etc.

3. Public Service - Adult education, advice to public agencies and private citizens, cultural performances and exhibitions; part of the cost of libraries, museums, etc.

4. Student Financial Aid - Scholarships, grants, fellowships, waivers and work-study plus the interest and management cost of loan programs.

5. Research - Both that supported by grants and contracts and by general revenues.

The above are direct costs to the institution of its end products. The remaining institutional costs are incurred for purposes which support the above activities, and are not ends in themselves. These costs must be allocated among the above five items (or among the other indirect cost categories themselves) in accordance with good judgment and common agreement based on as complete records as can be maintained. The allocation procedure should be regularly updated as information and conditions change. The charges will always be approximations, but the exercise of distributing them must be made if we are to conduct the operation of colleges and universities in accordance with established goals and economic principles. The indirect institutional costs are:

6. Administration and Support - Including clerical and maintenance personnel not directly attributable to an end function, plus the cost of the facilities and equipment they use in such work.

7. Current Funds for Physical Plant - Includes debt service on bonds or capital loans for construction. Depending on bookkeeping methods employed, it may also include outright land acquisition, plant expansion and some capital replacement.*

8. Libraries, Museums, Etc. A portion of which cost should be attributed to public service as an end product of the institution (preservation of knowledge, public reference, etc.), and the remainder allocated to instruction and research.

These are the bills that must be paid from one source or another, regardless of the bookkeeping procedures currently employed. The determination and allocation of these costs is a continuing task of the managers of higher education. Identification of how much is to be paid from what source, why, and in what manner is a central concern in shaping financing policy.

User and Societal Costs

In addition to the actual cost of operating institutions of higher education, there are other costs which are incurred by users and society which must be considered in an economic analysis. In addition to providing much of the operating and capital costs through tax funds and philanthropy, society incurs indirect costs, notably a reduction in gross national product; and a loss of tax revenue to its governments, first because students are not substantial earners, and second because government funds that go into education produce less tax revenue than they might if invested elsewhere. Indirect societal costs are real and should be taken into account, but they are much less vital than the indirect costs borne by students, the principal users, in making practical decisions about financing higher education: It is the size of net student costs that largely determines who is to be educated.

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*This treatment of capital costs (as well as the breakdown of operating costs) is consistent with the reporting procedures used by U.S. Department of HEW, OE. See Mertins, Paul F., and Brandt, Norman J., FINANCIAL STATISTICS OF INSTITUTIONS OF HIGHER EDUCATION: CURRENT FUNDS REVENUES AND EXPENDITURES, PHYSICAL PLANT ASSETS, 1968-69, U.S. Dept. of HEW, Office of Education, National Center for Educational Statistics, Wash., D.C., 1971, P70.

Students incur certain real costs about which there can be little uncertainty: tuition*, books, living costs (whether living at home or away), transportation, etc. But there is considerable uncertainty and contradiction as to the proper role of foregone income, the earnings that a young person passes up when he decides to attend college instead of going to work. Foregoing this income is passing up real money. It amounts to the same thing as paying money out to invest in education, yet it does not always enter into discussions of total student costs.

With jobs limited, some even argue that if a student becomes a job-seeker he will simply be added to the rolls of the unemployed, or more likely, displace someone less talented from his job. They see post-secondary education as performing a "haven function" in keeping surplus labor off the job market. We are inclined to dismiss this point of view since no one is proposing shutting down colleges and universities and throwing potential students onto the labor market. To do so would radically alter the economy and move us away from the accepted goals for higher education.

Some have chosen to minimize the importance of foregone income since the presumed increase in future earnings attributable to higher education more than makes up for the loss. But this does not recognize the plight of lower income groups where families depend on the earnings or work contribution of their older children for survival. In their case, failure to make some allowance for foregone income -- to make it possible for them to invest in education -- shuts the door to additional study and repeats the cycle of low education-low income-high welfare.*

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*Throughout this report we employ "tuition" as a convenient, and widely used, term for the charges a student must pay in order to attend a college or university. It should not be confused with the unusual definition employed in Washington to designate sums that students must pay toward construction bond retirement and capital expenses.

As a matter of equity as well as of sound economics, foregone income must be recognized as a real cost in any analysis of education financing, recognizing that there are problems in deciding on the dollar amount to be used. So long as there is high unemployment among youth, annual earnings of a recent high school graduate can range from zero, for those who cannot find work, to $6,000 per year or higher. A figure of $4,000 for annual foregone income seems a reasonable amount for our purposes, and contrasts with student maintenance budgets of around $2,000 per year for students living away from home, and tuitions in Washington ranging from $249 at community colleges to over $2,000 at some private institutions.

Benefits

Cost-benefit analysis is a numerical process. It has proven most effective in industry, and in planning public works and the like, where it is possible to specify the outputs with some certainty, and to express relevant inputs in the same terms: dollars. The process becomes much more uncertain in education. We can count graduates, and even attempt to measure the dollar value of their extra earnings resulting from their education. But there is no way to put a dollar value on the more subtle and subjective advantages of an educated citizenry. Nor is it always possible to put an expected value on the results of public service or research. Indeed some of our most important material advances have grown out of research that was undertaken without any thought of practical value.

Attempts are being made to quantify in detail the outputs of higher education. We have serious reservations about their utility in cost-benefit analyses that dictate the operating decisions of colleges and universities. But used with caution, and with a recognition of their lack of precision, they can provide useful insights for planners and managers.

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*A much publicized recent study for a U.S. Senate committee by Henry Levin shows that the 3 million American males in the 25-34 age bracket who did not complete high school will suffer an aggregate loss of lifetime income of $237 billion, and governments will experience a resultant loss of tax revenues of $71 billion. Similar results affect those who do not go far enough in post-secondary education to improve their chances of fruitful employment. (See Levin, Henry M., "The Costs to the Nation of Inadequate Education")

The Range of Views on Benefits

If we could come to some agreement about who benefits from higher education, and to what extent, we would have a rational basis for allocating charges among the beneficiaries if such a course were deemed desirable. But since it is difficult to quantify these benefits, it is not surprising that serious and highly qualified analysts reach different conclusions, especially as to the relative benefits realized by individual users (primarily students) and society at large.* The following paragraphs briefly summarize the positions of the most influential recent writers on the subject.

Prominent among those who see students as the prime beneficiaries of higher education is University of Chicago economist Milton Friedman. He asserts that increased lifetime earnings of graduates is the major and quantifiable output. He acknowledges that there are societal benefits to education but asserts that they occur primarily at the pre-college level, and since they can't be measured anyway, they should not be part of the equation. He concludes that individual benefits increase as the level of study rises, and argues that students should pay the full cost of their education out of present resources, or out of future income through the vehicle of student loans.

Theodore Schultz, another Chicago economist, generally concurs in Friedman's conclusions, and also urges that we look upon education as investment in human capital. He argues that such a viewpoint, coupled with better information for the student on costs and options, would lead to more rational choices and better utilization of the system.

On the other side of the fence are a group of analysts who view society as the chief benefactor. Howard Bowen, economist and now Chancellor of the Claremont Graduate Center, points out the "vast social benefits" of higher education and urges heavy public subsidy since users would not be willing to pay their full share of the cost of quality education. He asserts that society is in fact paying a much smaller share of the cost of education than it realizes because foregone income is a real cost, and when it is taken into account, students are paying three-fourths of the costs even at low tuition public institutions. Bowen urges even greater societal contribution to higher education, largely so as to increase student financial aid.

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*More detailed examination of the different points of view, as well as a more extended discussion of the whole cost-benefit question, are contained in Appendix 6.

M.M. Chambers, educator at Illinois State University, looks upon the societal value of higher education as an extension of the Jeffersonian ideal of free public education. He sees education as benefiting every citizen, and as too important to be subject "to the vagaries of an unregulated private pricing system". He therefore urges that the burden be borne by citizens through equitable taxes.

Alice Rivlin, economist at the Brookings Institution, speaks to benefits at the federal level. She stresses general societal benefits which are realized in large measure by providing opportunities for low income students. She argues for a high federal subsidy which would have the effect of lowering costs to low income students.

Somewhat different conclusions were reached by W. Lee Hansen and Burton Weisbrod, Wisconsin economists, as a result of a limited cost-benefit analysis of higher education in California. Using data for 1965, they confined their analysis to factors that could be quantified -- costs, the increase in lifetime earnings which students can expect as a result of their education, future tax revenues resulting from this increase in earnings, and present tax payments by income level. They found that the State subsidy of higher education was three to five times greater than the anticipated increase in taxes that would be generated by graduates (eight to twelve times greater for non-graduates).* The dollar amount in added taxes that an average graduate would pay the state during his working life was estimated to be $1,000; his proportionate share of the state subsidy to higher education was $4,400 - $6,200. Thus they compute that the state is paying at a rate of about $3,400 - $5,200 per student for the overall societal value of the system. Whether the state gets its money's worth from educating a student is left to the judgment of planners and lawmakers.

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*It should be noted that current costs in Washington are slightly higher than those experienced in California in 1965, and that tuitions are considerably higher. Thus the current state subsidy in Washington is lower than that found by Hansen and Weisbrod.

Perhaps more significant was the Hansen and Weisbrod analysis of benefits derived by students from various economic groups, taking into account only current taxes and expenses. They found that public subsidies tend to go to students from higher income backgrounds since these wealthier students are much more likely to take advantage of the subsidy by going to college, and are more heavily represented in the higher-subsidized university and state college segments. They cite this finding as an argument against the low tuition structure, since it benefits the wealthy more than the broad range of the population it was intended to serve.

The method of analysis used by Hansen and Weisbrod has come under criticism, notably in a study by Joseph Pechman which takes issue with their evaluation of the taxpaying population. Nevertheless, their finding that students from high income families derive the greatest benefit from the subsidy of low tuition has considerable significance, and has been largely substantiated in a study in Florida by B.W. Windham, economist at the University of North Carolina. These studies suggest that the long cherished notion that low tuition, of itself, assures equal access is invalid. Instead, state tax contributions used simply to hold down tuition have the effect of subsidizing those who need it least, since such a scheme overlooks foregone income and other factors that exclude the poor. Higher tuition would permit channeling some of the subsidy directly to low and middle income students in the form of increased aid.

The Utility of Cost/Benefit Analyses

Although a number of others have written on the subject of relative benefits, their conclusions are simply variants of the fundamental positions summarized above. So where does all this leave us with regard to the value of such analyses in determining who should pay for higher education? The discipline forced by the procedure has the virtue of highlighting cost centers and providing useful data for planning and determining allocations of funds. It tends to sharpen thinking about the distribution of the burden. But it does not provide us with a simple and reliable formula for apportioning the load.

We can summarize the major points of agreement, to which we subscribe:

1. There clearly are societal benefits to some of the activities carried on in colleges and universities and directed toward public purposes: research, service, preservation of knowledge. All would agree as well that there is societal benefit in the instructional function. But there is no agreement as to whether or how any of these can be quantified.

2. There are individual benefits which can be quantified (increased earning power, etc.), as well as others that probably cannot (job and social mobility, acceptability in public life, the consummatory pleasure of college life). Of those benefits that can be quantified, it is apparent that these vary

   a. by level, with increased earning power at the completion of each successive degree level, on the average; and

   b. by program (physicians tend to earn more than scholars in the humanities).

3. Net cost to students is an important factor in determining who attends college. Most agree that foregone income is a major and real cost, and is probably a more important factor than the level of tuition in determining who attends.

3. PRICING AND STUDENT AID

A review of recent analyses, and current and proposed practices, reveals that there are three basic models for funding public post-secondary education, each with variants and options: 1) low or no tuition*; 2) full-cost pricing; and 3) a mid position between these two which we now have in most systems, and which Howard Bowen refers to as a "conglomerate model", presumably since it draws together several financing theories and devices. Bowen identifies the underlying issue in financing as "whether the conglomerate system should veer toward the full-cost model or toward the free public education model".** Questions about channeling funds directly to institutions or through students, and the mix of various forms of student aid, further complicate the issue.

The answers are influenced by a set of equally complex and often conflicting factors: the goals for the system and their relative importance, assumptions about public and private benefits, and the ability and willingness of the state to support the system. The following analysis of the basic financing alternatives and student aid options attempts to highlight the interaction of these variables.

Low or No Tuition - Free Public Education Model

Exponents of the position that society is the prime beneficiary of post-secondary education would favor a low tuition plan in which the state bears most of the burden. A relatively low tuition and fee charge is, of course, the pattern for home-state students in most public colleges and universities. It is a legacy of an earlier time when free public education was expected to provide access for all who wanted it. Only latterly have we come to recognize that costs other than tuition present an even higher barrier to access for many people.

The extreme case is zero tuition, and many would argue that education is genuinely free, and all economic barriers to be overcome, only when students are subsidized to cover the other costs of going to college, such as living expenses, books, etc., and even including foregone income. Such a pattern is not unknown: many institutions abroad, and our own service academies provide stipends in addition to covering all costs. Yet as a practical matter, zero tuition is a thing of the past in most states. The only major post-secondary systems that make no general charge for resident enrollment are the California community college network and the City University of New York. State budgets have come to rely on student charges to help finance public institutions, and in view of the growing squeeze on the states, any reduction seems unlikely.

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*As noted previously, we use the term "tuition" to describe the total charges a student must pay in order to attend an institution.

**Bowen, Howard R., "Finance and the Aims of American Higher Education" in Orwig, M.D. (Ed.) Financing Higher Education - Alternatives for the Federal Government, American College Testing Service 1971 p165.

The level of charges for public four-year colleges and universities now ranges from about 10 percent to 30 percent of the cost of instruction (generally defined as "current operating costs for instruction" or the equivalent) in most states. Washington was at 28 percent for the universities, and between 24 and 27 percent for state colleges in 1970-71. Community colleges tend to be lower on the average, but to range more widely, from no charge in the huge California system to a high of around 50 percent in some Midwestern states; Washington's community colleges are near the middle, with 1970-71 charges at 21 percent of average instructional cost.

1972-73 tuition and fee charges in Washington for undergraduates are set at $564 for the universities, $495 for state colleges, and $249 for community colleges. These amounts are not inconsequential, but still represent a small portion of annual student budgets -- the out-of-pocket cost of attending college -- which now range up to $2,100 plus tuition for campus residents and $1,350 plus tuition for commuting students. Tuition represents a much smaller portion of all costs, of course, if foregone income is included.

The principal purpose of no or low tuition is to maximize enrollment from all economic classes, thus serving the state's needs for manpower and providing lower income groups with a chance to rise in the system. But recent studies suggest that it is the middle and upper income groups that take the greatest advantage of low tuition systems. Thus the state's subsidy, which is equally available to all students, is most likely to be used by those who need it least. Furthermore, student financial aid programs tend to be weakest at low tuition institutions, in part because the need for aid is not perceived by planners and budget makers, further inhibiting low income participation.

Low tuition continues to have popular appeal, and the public and student outcry at each increase is particularly painful. But unless low charges are coupled with substantial student assistance programs, the plan fails to achieve the goal of effecting open access. The low tuition model puts private institutions at a competitive disadvantage, contributing to their fiscal plight. By forcing reliance on a single major source of funding, it reduces the independence of public institutions and pushes them into the uncertainties of the political arena. Further, since low tuition is usually reserved for a state's residents, while those from other states pay substantially more, it encourages parochialism by reducing the number of students who cross state lines for their education. Although it has drawbacks, the low tuition model can be an effective device for broadening enrollment _if_, and _only if_ it is accompanied by a student aid program that helps low income students meet the non-tuition costs of education.

Full Cost Pricing

The opposite extreme, which appeals to those who view students as the major beneficiaries of post-secondary education, would ask users to pay for the full cost of the benefits they receive. Here we assume that all students would be charged the equivalent of the average cost of instruction, ignoring differences by level or program. To reflect true full cost, of course, the current cost of capital facilities must be included. Based on a recent analysis of 1970-71 costs in Washington, this would amount to charges of $1712-1815 at the universities, $1390-1570 at state colleges, and $986 at community colleges plus an amount for capital costs in each case.

In its pure form -- that is without a massive financial aid program -- full cost pricing would have a drastic effect on access and enrollments, with many low and middle income students forced out of the system.

Serious proponents of full-cost pricing couple it with substantial student aid, awarded on the basis of need, with need to be determined by one of the existing mechanisms that objectively assess the resources available to a student (and his family), and weigh them against his total educational budget.* It is imperative, of course, that student aid be awarded in the full amount required if accessibility is not to be hampered.

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*The Washington need grant program now employs an effective

Under such an arrangement, the state's entire contribution to the cost of instruction would be in the form of student aid, thus simplifying and clarifying the process of allocating state funds. Establishing the appropriate charges and aid budgets would be a matter of negotiation between the state and the institution, but such a process should be more conducive to institutional autonomy than detailed budgeting. The reduction in state influence would be offset by increased institutional responsiveness to students, who would either be paying the bills or deciding where their aid funds are to be spent.

Among other advantages claimed for full cost pricing is the increased incentive for serious involvement in education by students who are paying the full bill, even if part of the payment is coming via aid funds. Another is that private institutions would be strengthened, since they would be more price-competitive with state institutions. In addition, they would be greatly benefited, of course, if state student aid funds could be used at private as well as at public institutions.

On the negative side, the increase in tuition charges to those who do not qualify for aid under the need formula would produce considerable pain and outcry. Very wealthy students would suffer little, but many from middle income families would feel real hardship. Thus it seems important to provide loan and work opportunities for those above the need level to help cushion the shock.

The full cost pricing model, if and only if accompanied by a fully funded, need-based aid program, appears to have considerable merit (although the perils of full cost pricing coupled with a lagging or half-hearted aid program need reiteration). Tuition payments by students who are above the

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need analysis and fund disbursement mechanism that meets this requirement. It must be pointed out, however, that with 18 now established as the age of majority, there may be considerable difficulty in continued reliance on parental contributions to education costs. Need may become determined solely by the student's own resources. A similar problem may develop in connection with differential charges for out-of-state students. The right to vote in a state, which can be established in a short period of time, may be sufficient to establish residency and the right to resident tuition. These matters are now before the courts, and could seriously upset existing financing patterns.

need level would generate new income for higher education, part of which could go toward funding increased aid, and part toward institutional program improvement.

Another factor that may push states toward full cost pricing is the student aid component of the 1972 federal higher education legislation. When (and if) fully funded, this legislation will provide basic grants of up to $1400 per student based on need, plus up to $800 more for disadvantaged students. Only with tuition levels higher than those presently charged will states enjoy the full potential benefit of these federal funds.

The Conglomerate Model

As noted earlier, the system in use in most states is a mid position between the previously described models, with some of the characteristics -- and advantages and disadvantages -- of each. The cost of instruction is covered in part by state appropriations and in part by tuition, to some extent confusing the issue of who is paying for what.

Since most state public systems once charged little or no tuition, and have evolved toward the present form as student charges have been increased, one might look upon the conglomerate model as transitional. Whether state systems will continue to move toward full cost pricing by continuing to raise tuition remains to be seen. Some could shift back toward the no or low tuition pattern, but such retrogression seems unlikely. For the present the conglomerate model is the prevalent form, and it may continue to exist well into the future as the most logical way to fulfill state goals in a balanced and responsive manner.

The conglomerate model nicely straddles the benefits issue: if post-secondary education benefits both society and individuals, it is appropriate that both beneficiaries pay (which is true as well, of course, of a full-cost system coupled with government-funded student aid).

Perhaps the strongest argument for the conglomerate model is that it is in widespread use, and that it works, albeit imperfectly. It also lends itself to change as needs vary or as shortcomings appear: if access is found to be poor, aid and remedial programs can be shored up at the expense of increased tuition or state appropriations; if the state's resources for education fail to keep pace with rising costs, more of the burden can be passed to users, and more of the student aid shifted to loans.

Variable Pricing

A variant of full cost pricing, which is proportionately applicable to the tuition under the conglomerate model as well, is the plan under which student charges vary across programs or across educational levels. Tendencies to move toward variable pricing are apparent in many states and institutions where tuitions for some professional programs, such as medicine and business, are higher than those for other fields; and where graduate tuitions are higher than undergraduate charges.

Varying tuition by program can be justified for three different reasons: because costs differ and students should be paying proportionately; because lifetime earning prospects in some fields are greater than in others, and those who will benefit more should pay more; and in order to channel students into areas of manpower need.

The third of these justifications we set aside as either ill-advised or ahead of its time. Altering fee levels so as to induce students to enter critical fields would require far more skill in manpower planning, and more vision, than has been exhibited in the past. As evidence, witness the transition from acute shortage to embarrassing surplus in teachers and Phd's brought about by alarums and financial inducements in the 50's and 60's. An additional deterrent is our traditional resentment toward governmental manipulation of private choices.

Pricing all programs on the basis of cost would interfere with open options and access, which are among the presumed goals of education. Only wealthier students would tend to enter costly programs, and those less able to pay would gravitate toward cheaper programs for which they may be unsuited, to the detriment of both public and individual benefits. In addition, at undergraduate levels, where inter-program transfer is frequent, different tuition levels for any sizeable number of programs would create an administrative nightmare. It would appear wiser to accept the minor inequities inherent in using average costs to determine undergraduate tuitions.

In graduate-professional programs, where student commitment is more clearly established, and where future earnings are more predictable, there appears to be more justification for varying tuition in accordance with anticipated income, and costs as well. But if we are to charge future high earners more for their education, they should have access to grants or long-term loans to cover higher costs. Otherwise, low income students will be forced out of remunerative professions.

Variable pricing by level is a quite separate option that needs examination and consideration. Tuition would be related to costs by level. These costs for 1970-71 in Washington, again ignoring current cost of capital facilities, were as follows (actual 1971-72 resident tuition and fee charges are shown in parentheses):

	Universities	State Colleges	Community Colleges
Lower Division	$1319 - 1327 (495)	$1126 - 1257 (447)	$986 * (249)
Upper Division	1849 - 2034 (495)	1624 - 1849 (447)	
All Graduate	3660 - 3751 (555-771)	3056 - 3295 (507)	

*Average for all institutions and programs. Academic programs averaged $868, vocational programs $1234.

These figures represent the approximate amounts that would be charged in tuition and fees if variable pricing by level were to be adopted. Moving to such a plan could have important effects on equity, access, and efficiency.

There have been many attempts to estimate the additional earnings of college graduates attributable to their education. The estimates vary rather widely and there is no real consensus one can rely on in estimating private return. One element does, however, seem to be fairly clear: there is no evidence that a little bit of college benefits the consumer financially. It is instead the possession of a degree (A.A., B.A., PhD., etc.) that opens employment opportunities to the individual. The certifying effect of graduation seems to be paramount in broadening opportunities for higher private returns.

Persistence and completion ratios for students entering post-secondary education follow a classic pattern: most students who are going to drop out do so in the first year of study -- many even in their first term. Once a student has successfully completed his initial years, the odds of his persisting to his degree objective are much higher.

The risk to students of not completing a program is therefore concentrated in the early period of study. Concommitantly, the probability of no private return for the educational investment is heaviest at the entry level. Thus there appear to be sound reasons for keeping student charges low during earlier years, and for raising them in later years as the likelihood of personal benefit increases.

The goal of universal access is also well served by variable pricing by level, since it reduces the entry cost into the system. Thus it can insure that low income, disadvantaged, and high academic risk students do not perceive the price as a prohibitive barrier.

Variable pricing by level can also have significant effects on efficiency by forcing closer attention on costs as they are reported to vary by level. Taking note of the fact that one of the aims of education is to equip the student to learn on his own, one Washington educator told us in an interview that, "It is a sad commentary on our system that it costs more to educate students the longer we keep them in higher education." Of course there are good reasons for costs to go up as students progress: smaller specialized classes, more individual attention, more expensive equipment. But efficiency would be well served by forcing attention upon these differentials to assure they do not get frozen by complacency or faculty preference. Requiring students to face increasing charges as they progress through the system could well have this effect.

Channeling Funds

Deciding whether state funds should be channeled directly to institutions, or through students via aid programs, is effectively much the same as selecting between a no or low tuition and a full cost pricing model. The proportion which goes through each channel determines whether the conglomerate model will be shifted toward low or high tuition.

The arguments on channeling closely parallel those for low and high tuition. In brief, proponents of channeling funds through students on a need basis see this course as improving equality of opportunity by drawing more low income students into all kinds of institutions. They argue that the subsidy represented by government funds would go to those who need it, whereas institutional channeling distributes the subsidy equally across the whole student population, and that population is heavily skewed toward middle and upper income brackets. They also note that student-channeled funds would lead to higher tuition in public institutions, thus increasing the motivation of those enrolled in them, and equalizing the competition with private institutions, to the latter's benefit.

Proponents of institutionally channeled subsidies argue that quality and quantity of higher education are benefited when institutions can determine how the funds will be used. They see this channel as more directly and quickly responsive to changing needs, since institutions could immediately switch priorities and emphases, rather than being required to wait for students to switch their enrollment patterns and dollars. They also point out that institutional channeling will rescue many a college and university now on the brink of financial collapse. Their adversaries point out, of course, that such institutions may not be worth saving if they cannot attract students -- and their tuitions.

The battle over channeling funds has raged in the halls of Congress during the debate over the 1972 higher education legislation. The decision came down on the side of student-channeled funds, which received the bulk of the authorization, with the inevitable compromise providing smaller amounts for institutions. (See Appendix 2)

Student Aid

The extent and nature of student financial aid programs is an integral part, perhaps the most vital part, of financial planning directed toward achieving the state's goals for post-secondary education. It is not an add-on, to be considered after basic policy is set.

If the state is to move toward lower tuition, or is to retain the present low tuition pattern, then aid programs should be considered primarily in the light of equality of access. The state must decide how much more in aid funds it is willing to spend to draw a representative number of low income students into the system.

If the shift is to be toward full cost pricing, then it is all the more essential that aid be treated as central in financing policy: true full cost pricing means that the only state subsidy for instruction is through student aid, all other instructional costs being met by tuition.

The most damaging thing that can occur is a gradual drift toward full cost pricing without a comprehensive plan and a goal. In state after state we have seen the following scenario unfold: the budget is tight, and in order to raise funds for post-secondary education, tuitions are raised. Then separate consideration is given to student aid, and since things are tight the appropriation is trimmed. Aid may go up, but not enough to prevent forcing a few more low income students out of the system. It is this kind of experience that makes students and citizens wary of increasing tuition toward full cost pricing. The issues surrounding financing, and tuition levels, will never be rationally resolved if such short-sighted action continues.

Later sections deal with financing and aid plans in use or under consideration and present some alternatives for Washington. It seems important, then, to describe and define the forms of student aid that are available, and that can be combined into a coherent program. Basically, there are four forms: tax credits, grants and scholarships, work-study, and loans. Each is discussed in turn.

Tax Credits - This is a plan under which families of college students would be permitted to deduct education costs from their taxes. Proposed primarily at the federal level, such a provision would have little importance in a state such as Washington, which does not collect an income tax.

Grants and Scholarships - May be awarded on the basis of need (usually called grants), scholastic performance (usually called scholarships), or a combination of the two. Achievement was once the dominant criterion, but the trend in recent years has been strongly toward need-based grants intended to extend access to low income students.

Some state grants are useable only at public universities, with the amount based on a computation of assistance required by the student (and his family) to cover costs at a state institution. Others, including Washington's provide an amount that offsets costs at public or private institutions, usually up to a given limit. Such a system has the effect of providing tuition equalization grants to qualifying recipients.

A proposal currently receiving considerable attention is the portable grant, or voucher. This plan would provide students with need-based grants toward the cost of education, including tuition, at any institution (although some would restrict exportability of grants to other states). By making awards from a central state source, rather than through institutional financial aid officers, the student has complete freedom of choice among institutions, with assurance that his grant will not be sized in accordance with local practices or the availability of local funds. Some plans also call for supplemental grants to public institutions in amounts equal to the difference between tuition and the cost of instruction.

The portable grant model has the potential for forcing institutions to respond to student needs -- if students don't like a particular college's programs they will stay away (and take their subsidies elsewhere), forcing the college to change or go under.

Work-Study - The federal government has provided the principal support, for over ten years, to a program which subsidizes wages paid for a limited amount of student employment on campus, in social service agencies, etc. A usual condition of such employment is that it supplement existing services and not displace present employees.

Only Colorado currently operates a work-study plan financed at the state level. Officials there report that the program functions well, subject only to the usual problems of unpredictability of student employees. Such a plan is worth considering in Washington. Student employees could perform many on-campus tasks that would free faculty members to concentrate on their central responsibilities (see also Appendix 4 on productivity).

Loans - Student grants, work-study programs, and tax credits all require full current funding from the state budget (or loss of income in the case of tax credits). Loan programs, on the other hand, require proportionately little current state expenditure. State subsidized programs need only cover the cost of administration, and in some instances, interest differentials or losses during forgiveness periods, defaults, and start-up costs. Federal programs permit shifting much of the state's burden and risk to the national budget. Thus loans are an attractive component of a student aid program from the standpoint of the state.

If tuition charges are to be increased, and offset, for low income students, by need-based grants, many middle income students who do not qualify for aid under need formulas will suffer hardship. Provision of easily repayable loans is essential if the general public is to accept higher tuitions. Even if tuitions do not rise markedly, a loan program that will assist all students in financing their post-secondary education would improve equality of access to the benefit of both state and students.

Various loan programs are, of course, currently available. In addition, there is a bewildering array of proposed plans and models in use in other states. They represent a variety of borrowing options, repayment schemes, and financing possibilities. Thus we devote the next section of this report to a detailed review of selected experience elsewhere and descriptions of some attractive alternatives for Washington.

4. CURRENT PRACTICES IN STATE FINANCING

Each of the fifty states has devised its own plan for financing post-secondary education. With no common thread, aside from the high value placed on education in all states, a wide variety of patterns has evolved, influenced by each state's history, geography, economy, and tradition. This section reports pertinent highlights of several state financing patterns and proposals, selected to illustrate some of the prevalent emphases and alternatives. Comparative data on these states and the states regularly used by Washington as "comparison states" are presented in Table 2.

The evolution of such diverse financing arrangements was due in part to the absence, until quite recently, of centralized state planning. This situation has changed markedly over the last 20 years as enrollment growth and cost rises have made post-secondary education a major concern of state governments. Statewide governing boards, strong coordinating agencies, and actively concerned legislative committees have made systematic efforts to create coherent financing plans. The legacy of diversity is still with us, but a tendency toward similarity is likely as states emulate each other's successful programs, and as they alter their plans so as to take maximum advantage of new federal legislation.

Two Predominantly Public Systems: Colorado and California

Whereas most eastern states depend upon a substantial private sector, post-secondary education in the West evolved in a different pattern. With most of the population growth and development occuring after passage of the Morrill Land Grant College Act of 1862, the public institutions have dominated, clearly influencing the financing pattern of today.

Colorado is representative of many of these states, with eight four-year institutions under four different boards; and twelve community colleges, half under a statewide board and half under local boards drawing on state and local funds. These public institutions enroll about 86% of the 100,000 FTE students in the state (excluding the Air Force Academy), with the remainder in seven private institutions.

Resident tuition is set at 25% of estimated operating cost per FTE student (1971-72 tuition range for four-year institutions: $318-$566). Colorado has long attracted students from out of state, so it is not surprising that it was among the first to set non-resident tuition at the full cost of instruction.

Institutional budgets are arrived at on the basis of staffing guidelines applied to enrollment estimates, adjusted in the light of special needs, and subjected to detailed legislative scrutiny. Until the last few years, low tuition and tuition waivers were the only significant student subsidies. A need-based student grant program, plus a state work-study arrangement will channel some $9.2 million (8% of state post-secondary appropriations for operations) directly to students in public institutions in 1972-73. No state funds go to private institutions or their students.

California's public system enrolled 740,000 FTE students in 1970-71, more than twice as many as any other state, and 88 percent of the state's post-secondary students. Total state government support was a staggering $817 million, but in terms of support per student it was only 19th nationally.

As in Colorado, state support is divided between institutional and student support, but with a heavy bias toward institutions. An objective of the state's policies, which has been successfully achieved, is to hold down tuition: California has the lowest average tuition of any state, with no charge at community colleges, $160 per year at state colleges, and $600 at the University. The weighted average charge for all public institutions is $160 per year.

State student aid is confined largely to the State Scholarship Commission Program, which channels tuition offset funds to students in both private and public institutions. The total outlay of the Commission in 1970-71 was $15.5 million, only 1.9 percent of total state appropriations for post-secondary education. It will rise to 3.1 percent in 1972-73 under a long-range expansion program.

Budgets are prepared by each of the four-year segments and appropriated as lump sums for the nine-branch University of California and for the 19 state colleges and universities. The community colleges, which obtain 70 percent of their support from local district taxes, receive state funds according to a statutory attendance formula, reflecting the legacy of these institutions as extensions of the K-12 system. Capital outlays are covered on a case-by-case basis.

Support to private institutions is minor and indirect, since direct support is prohibited by the state constitution. It includes the right to condemn property in the same manner as public agencies, property tax exemption, deduction from state-taxable income of gifts to education, and participation in the state scholarship program. Over 80 percent of all state scholarship funds go to students in private institutions, though only 50% of state scholarship recipients attend private institutions.

Balanced Public-Private Systems: New York and Pennsylvania

New York State has the second largest public post-secondary educational system in the country, enrolling in 1970-71 some 330,000 FTE students. In addition to this, and unlike systems in the West, New York has a large number of private institutions which enroll over 44% of all post-secondary students in the state. The public system, founded in 1948, has become a major factor in the statewide enrollment mix of New York only in the last decade (though the City University of New York has long been an important factor in New York City).

New York has led the way in confronting the problems shared by other Eastern states which once relied primarily on private institutions to take care of post-secondary educational needs, but which now are forced to increase the public sector's capacity in order to meet enrollment demand. New York's solutions to these problems have been innovative and complex, and illustrate most of the steps that have been taken to cope with the mixed-system problems. Part of the solution lay in spending lots of money. In 1970-71, state and local appropriations for post-secondary education came to $2,718 per FTE student, second among the states only to Alaska's abnormally high figure.

These funds to higher education appeared in basically three areas: the public system, directly to the private system, and to students.

1. State support for the public system is handled through the New York Board of Regents, which has nearly complete budgetary authority. In addition, each of the public universities (the State University of New York and the City University of New York) has its own Board of Regents which makes budgetary recommendations. In 1970-71, SUNY and its community colleges received $526 million while enrolling 75% of all state students, while CUNY, which enrolls 70,000 students, received $86 million in direct state aid. In addition to all of the above aid, New York provided $120 million in capital aid to public institutions.

2. New York has maintained since 1969 a program of direct support to private universities and colleges within the state. This "Bundy Aid" provides annual payments of $400 per earned bachelor's or master's degree, and $2400 per doctoral degree, to private institutions meeting accredidation standards. In 1971-72 the program cost approximately $30 million and represented 3% of total state higher educational expenditures. Though there has been some dissatisfaction among private institutions regarding the use of degrees as a measure of productivity, and as a criterion for aid, it seems to provide a standard which minimizes state control. In addition to this non-categorical aid, New York has budgeted for 1972-73 just over $20 million to aid private medical and technical schools.

3. The state operates a number of large aid programs directed towards resident students. The greatest measure of aid has gone to those attending private universities and colleges, but the proportion is slowly changing in favor of the public institutions. Of the four major aid programs, two scholarship programs accounted for $69 million in 1971-72 and represented over 7% of all state funds to higher education. These two included the Scholar Incentive Award, a totally need-based program for New York residents, which provides maximum grants of $600 for use at any institution in the state; and the Regents Scholarship Program, a competitive, partially need-based award limited to tuition and providing a maximum grant of $1,000. Neither of these programs is designed to cover anything more than tuition costs. Therefore, New York has funded a Higher Education Opportunities Program and a special opportunities program (SEEK) at a level of $31 million in 1971-72, both designed to provide comprehensive aid to those with significant educational disadvantages. A loan program, which is described in detail in Section 5, has provided guarantees for loans of over $1 billion since its inception in 1957.

Pennsylvania, the third largest state, has an approximately equal public-private mix as does New York, and also channels most of its financial assistance through student aid. Although its level of state and local appropriations per student is high (seventh in the nation) it stands 46th in terms of post-secondary expenditure for each dollar of per capita income. This disparity derives from the fact that Pennsylvania has not until recently committed itself to support of low tuition public education and consequently has a rather low rate of participation in post-secondary education.

Of particular interest in Pennsylvania are a number of practices and programs which are not widely used in the U.S., including direct aid to private institutions, financial aid for students who leave the state to attend college, and advance provision of state funds to meet matching provisions of federal programs. Some major elements of the program:

1. In addition to indirect aid to private institutions via student grants and loans, Pennsylvania has provided direct state support for private higher education at private non sectarian colleges and universities for several decades. In 1965, three universities (Temple, Pittsburgh, and Pennsylvania) which were formerly private became state-related and thereby eligible for extensive aid. In 1970-71 these three institutions received just over $150 million in operating and categorical aid. In addition, 14 state aided independent institutions with autonomous governing boards received over $22 million in aid. These sums, totaling $171 million, represented about 50% of the total higher education budget for the state. The purpose of these massive grants, which are slated to continue at approximately the same levels, was to rescue these 17 institutions from financial insolvency and to encourage the enrollment of Pennsylvania students in Pennsylvania private institutions. The other 103 private institutions in the state also receive occasional direct grants -- usually for capital improvements.

2. The wholly state controlled state college system consists of 14 colleges and Pennsylvania State University distributed about the state. In addition, there are presently 15 community college campuses. Tuitions at most public institutions are comparatively high ($700/year), although aid grants detailed below attempt to meet approximately half the tuition costs for those unable to pay.

3. In 1965 Pennsylvania initiated its Higher Education Assistance Authority with funding at $3.5 million. Since that time Pennsylvania has removed academic qualifications from its assistance programs -- basing grants and loans solely on need. Of particular interest within the program is the applicability of Pennsylvania student aid to out-of-state schools. In 1970-71, $8.5 million was used by Pennsylvania residents in colleges outside the state -- an amount equal to 17% of the $50.7 million in grants awarded. Private universities and colleges, plus the three state-related institutions, received 55% of all student aid. The entire aid program amounted to an exceptional 14.5% of state expenditures for higher education.

In addition to the grant program, Pennsylvania has supported a State Guaranteed Loan Program since 1964 which has loaned over $400 million. $105 million of this amount was contracted in 1970-71.

4. Finally, Pennsylvania maintains a special fund for use by institutions which are in need of monies to fulfill matching grant provisions of federal programs. The purpose of the fund has been to insure that the maximum use is made of federal funds. Approximately $2 million of this fund were dispersed during 1970-71, mostly as matching grants for the federal Work-Study program.

A Dual Support System: Illinois

Illinois, the fifth most populous state in the country in 1970-71, ranked third in combined state and local appropriations per student ($2,457) for post-secondary education. The state has remained committed to developing a system of breadth and quality which is both public and private. At present, Illinois private colleges and universities enroll some 30% of its post-secondary students, and in order to allow these institutions to retain their share of the population, Illinois has developed a mix of student and institutional aid programs, many of which resemble those in New York and Pennsylvania.

1. The state provides its private institutions with the usual forms of indirect aid, but in addition has instituted a direct grant program which provides to private colleges and universities $100 for each freshman and sophomore Illinois scholarship winner and $200 for each junior and senior undergraduate Illinois resident. The program cost Illinois $5.7 million in 1971-72. This represents about one percent of total expenditures for higher education. In addition to these direct grants, Illinois last year allocated over $20 million in categorical aid to medical schools throughout the state, and $350,000 in funds for inter-institutional cooperation.

2. The Illinois state system is presided over by a Board of Higher Education which serves budgeting, planning and regulatory functions. Funds for the system are appropriated primarily according to an FTE enrollment formula. Some four different boards have governing authority over the segments within the state system.

3. Aid to students in Illinois includes both competitive and non-competitive grants in amounts from $150-$1200 but limited to tuition. An important characteristic of the

need grant program is the provision for accepting upper division students as first-time applicants. This provision, along with aid allowances for part-time students, has expanded greatly the applicability of these funds to a wide range of Illinois students. The program rose in funding from 1971-72 to 1972-73 from $40 million to $51.38 million. This last amount represents over 10% of total post-secondary educational expenditures. A consistent 65% of the aid has gone to students attending private institutions. In addition to this aid, the Illinois State Scholarship Commission administers a standard state guarantee loan fund which has guaranteed, since 1958, just under $200 million in loans. A final element of student aid in Illinois provides for institution-determined tuition waivers to students meeting various criteria.* Last year 3.75% of all state undergraduates were on waivers which added up to $23.4 million in uncollected funds, about 4% of educational expenditures. The program has come under criticism since it is not need based and does not tie in adequately with other forms of aid. Consequently, it is to be reduced to two percent of undergraduates this year.

Tax Credits: Indiana

Thirty percent of Indiana's 158,000 students are enrolled in private institutions. Primarily to aid these institutions, a tax credit plan was initiated three years ago which permits individuals to deduct from their income taxes 50 percent of gifts made to institutions of higher education, up to a limit of $50. Corporations have the same privilege, but with a $500 limit.

Note that the credit applies only to gifts, and is not the tuition tax credit or the deduction from taxable income which was proposed at the federal level in the mid 1960's. We are not aware of any state that has adopted a tuition credit against taxes.

It was computed that this provision could have cost the state $20 million in its first year to encourage twice that amount in gifts. Instead, only 8 percent of taxpayers took advantage of it and credits claimed totalled only $430,000. Presumably the privilege was used mainly by those who were already making contributions. In the following year, the amount claimed dropped to $264,000 but in 1971-72, the third year, credits rose to $1,128,000 due to an amendment that permits gifts to college and university foundations.

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*These waivers have been used primarily to encourage enrollment in occupational fields where shortages or social need exists.

Paradoxically, although the program was originated to aid private institutions, the public universities appear to have benefitted most from it, having attracted funds for new buildings. State officials indicate that this is an expensive program for the state, but note that it achieves the aim of maximizing institutional independence.

The Portable Grant, Full Cost Model: The Wisconsin Proposal

Wisconsin has one of the highest rates of high school graduation in the country, yet its rate of enrollment in academic post-secondary education is below the national average. Its pattern of financing, which is generally similar to that in most western and midwestern states, has not stimulated broad access to colleges and universities.

Economists W. Lee Hansen and Burton Weisbrod have worked out in some detail a portable grant or "voucher" plan calling for full cost pricing and full grants for all who demonstrate need, intended to further access, equity and diversity. The plan was recommended by the Governor's Commission on Education in 1970, and is still under consideration. Action on the plan has been held up by resistance of the State University, which saw a diffusion of monies and levelling of support under the plan; by uncertainty about the plan's effect on federal aid; and by legislative reluctance to raise tuitions.

The designers of the program describe it as "replacing the present system of state undergraduate education grants to public institutions with a system of state grants directly to students. The grants are designed (a) to offset the limited financial resources of lower income students and (b) to permit them to enroll in either public or private institutions. Public institutions of higher education would then derive their revenue not from the state but by charging all students the full instructional costs of college, much or all of which would be reimbursed by state grants to lower income students. Hence, higher income students would no longer have their educational expenditures subsidized by state taxpayers."*

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*Hansen, W.L. and Weisbrod, B.A., "A New Approach to Higher Education Finance", in FINANCING HIGHER EDUCATION: ALTERNATIVES FOR THE FEDERAL GOVERNMENT, M.D. Orwig, Ed., The American College Testing Program, Iowa City, Iowa, 1971 pp117-142

The proposal is limited to undergraduate education due to lack of time to work out its graduate analogue, and uncertainty that it is applicable at that level. It calls for a standard student budget, which would have been $2100 in 1969-70 ($1400 tuition, $100 books and supplies, $600 maintenance) as the basis for determining need. Expected family contributions, based on standard formulas, other grants, and normal student summer earnings would be deducted from the budget, and the remainder amount would be paid to the student for use at any institution in the state, public or private.

The designers of the plan computed its cost implications, based on 1969-70 data. They determined that student grants would total approximately $85 million, assuming no enrollment increases. With an anticipated enrollment increase of between 3,000 and 6,000 students, and on the assumption that all of these students would receive maximum grants, the added costs would run between $5 and $10 million. Hence the total cost of implementing the program would range between $90-$95 million. (This figure does not include an estimate of the administrative cost of handling the grant program.) Since the State of Wisconsin now commits resources in the amount of $123.3 million to support undergraduate education, adoption of this proposal would yield a saving of between $28 and $32 million. This substantial saving arises because the present large subsidies in Wisconsin ($950-$1350 per student yearly in order to maintain low tuition) are more than sufficient to offset the total estimated financial need of students.

CURRENT COSTS		PROJECTED COSTS	
based on state direct support of public H.E.		cost of grants to students unable to pay standard costs; current enrollment (approx. 157,000)	
Institutional Subsidies	$93.3 million		85.0 million
State aid to vocational schools	8.8	Additional enrollment of 3,000-6,000 lower income students	5.1 - 10.2
State Scholarships	6.2		
State Payments for Capital Amortizations	15.0		
TOTAL	$123.3 million		$90.1 - 95.2 million

SAVINGS: $28.1 —
$33.2 million

These savings could be used to (1) reduce the level of state taxes, (2) provide a source of funds for other programs, (3) provide additional grants to students and their families. (The Governor's Commission recommended that $500 be given across the board as a minimal state grant, which would have exhausted the savings.) The following table shows the effect of the program on various income groups:

Family Income Level	% Distribution of student families	Average Effect of Ed. Grant on Family Costs	
0 — 4,999	16	+ 600	reduces costs
5,000 — 7,499	19	+ 400	
7,500 — 9,999	20	- 50	little or no change
10,000 — 12,499	13	- 500	losses
12,500 — over	32	- 950	

For a family having an annual income of less than $5,000, possessing no net worth, and having a total of three children, no family contribution to the education of the child is expected, according to the CSS formula. The student contributes $350 from summer earnings and receives an educational grant of $1750 ($2100 less $350). He would be better off by $600 as compared with his position under current conditions.

For a student from a family having a $20,000 annual income, average net worth, and a total of three children, a parental contribution of $2,250 would be expected. In addition, the student would be expected to contribute from his own savings and summer earnings a total of $500. His total ability to pay would be $2750, well above the standard budget of $2100 and ineligible therefore for any grant. He would be worse off by $950, for his tuition has risen from $450 (the current Wisconsin tuition) to $1,400.

Deferred Tuition - The Ohio, Yale and Duke Plans

Deferred tuition plans are basically loan programs in which the institution or the state system is the lender. The right to borrow is automatic, and thus the procedure for obtaining a loan is simple and painless.

Most of the presently conceived plans include an "income-contingent" provision under which repayment is tied to the level of earnings of the borrower.

Ohio's Governor Gilligan proposed last year a deferred tuition plan for students at all public colleges and universities. Under it an entering student would sign an agreement to repay in full the subsidy provided by the state (now about $3,000 for four years), after graduation. Payments would begin after his salary reached $7,000 per year, and would be on a sliding scale geared to income. The Governor estimated that the state would save some $5 billion over the next 30 years.

The plan failed to take into account a number of economic factors, including the role of interest, and did not present a solution to the problem of collection from former students who leave the state. It has not been acted on by the legislature.

The Yale Plan and the Duke Plan are now in operation at these private universities, each of which has adequate endowment to carry initial cost of deferring tuition and the risk of default.

Under Yale's plan, the graduate pays off his loan at some percentage of his income per $1,000 borrowed for a specified repayment period. If the amount borrowed is not repaid at the end of the period, the rest is forgiven. He may also pay off the loan early at what amounts to a slight penalty.

The Duke plan is much the same. A graduate may reimburse the school in a lump sum plus eight percent interest, or make 30 annual payments of .36 percent of income for each $1,000 deferred.

Some features of deferred tuition and income contingent plans can be incorporated into any loan plan, as described in Section 5, which treats the subject of loans in some detail.

Table 2

STATE PROFILES (1970 - 1971)

STATE	FTE ENROLLMENT PUBLIC	FTE ENROLLMENT PRIVATE	Percent Private Enrollment	Nat'l Rank	% of Students Enrolled in Pub. Inst. to Total Pop.	Tuition Range[1] Public Inst. ($)	State Approp. for Operating Expenses ($)	State Approp.[2] for Student Aid ($)
CALIFORNIA	741,314	105,274	12.1%	(42)	3.83	0-150-450	817,126,000	23,813,000
COLORADO	88,173	13,093	12.9%	(40)	4.03	153-293-426	110,624,000	8,119,000**
ILLINOIS	239,895	108,639	31.2%	(12)	2.17	(0 to 420) 0-349-496	477,546,000	33,102,799
INDIANA	110,146	47,935	30.6%	(14)	2.11	(0 to 680) 0-527-700	173,979,000	3,140,000
MICHIGAN	258,479	44,311	14.3%	(37)	2.94	300-375-568	343,691,000	12,867,000
MINNESOTA	107,799	29,021	13.2%	(39)	2.83	326-393-522	143,448,000	1,475,000
NEW YORK	331,554	276,991	45.3%	(4)	1.81	(0 to 550) 0-276-831	745,529,000	70,300,000
OHIO	226,565	81,867	26.1%	(18)	2.10	300-450-660	260,690,000	8,500,000
OREGON	80,952	12,503	13.4%	(38)	3.84	90-136-504	95,901,000	530,000
PENNSYLVANIA	182,457	147,790	44.6%	(5)	1.55	330-630-710	352,787,000	51,400,000
WASHINGTON	125,657	17,909	12.4%	(41)	3.70	210-360-432	190,903,000	390,000 (1,444,127)*
WISCONSIN	140,497	27,520	16.4%	(33)	3.17	0-432-508	181,237,000	3,363,000
U.S. AVERAGES			26.01		2.42			

(1) Range indicates approximate yearly tuition and fees for Comm. Colleges — State Colleges — Universities for 1970-71.
(2) State Dollars for Competitive/Non-competitive aid to Undergraduate state residents for attendance at public or private post secondary institutions. [Does not include tuition waivers, grants for specific career preparation, or military service related benefits. California figure as reported by Boyd (see sources listing following bibliography) adjusted to include education opportunity grants.
* ( ) is the figure for 71-72 = Need Grant: $594,127 + Tuition Supplement Program: $850,000 (for use at privates only).
** For use at public institutions only (figure for year 71-72).

Table 2 - page 2

STATE PROFILES (1970 - 1971)

Student Aid as % State Approp. for Operating Expenses	State & Local Approp./Student ($)	Nat'l Rank	State & Local Approp./$1000 Pers.Inc.	Nat'l Rank	Per Capita/ Personal Income ($)	Personal Income $(Millions)	Population		(3)
2.9%	1567	(19)	14.67	(9)	4,426	88,825	19,994,000	CALIFORNIA	X
7.4%	1343	(33)	14.01	(13)	3,816	8,468	2,225,000	COLORADO	
7.0%	2457	(3)	11.83	(22)	4,502	50,131	11,137,000	ILLINOIS	X
1.73%	1597	(17)	10.20	(32)	3,781	19,679	5,208,000	INDIANA	X
3.75%	1500	(23)	11.91	(21)	4,059	36,124	8,901,000	MICHIGAN	X
1.03%	1335	(36)	11.15	(26)	3,824	14,580	3,822,000	MINNESOTA	X
9.4%	2718	(2)	11.57	(24)	4,769	87,111	18,260,000	NEW YORK	
3.3%	1403	(27)	8.45	(43)	3,972	42,382	10,688,000	OHIO	
.56%	1250	(39)	13.70	(15)	3,705	7,777	2,102,000	OREGON	X
14.6%	1930	(7)	7.79	(46)	3,927	46,329	11,817,000	PENNSYLVANIA	
.39% (.74%)***	1588	(18)	14.09	(12)	3,993	13,671	3,414,000	WASHINGTON	
1.8%	1758	(10)	19.15	(2)	3,693	16,351	4,433,000	WISCONSIN	X
	1625		11.34		3,915			U.S. AVERAGES	

(3) X indicates 7 states used by Washington for salary and appropriations comparisons.

*** Comparative figure for 1971-72 based on appropriations of $196,649,000. It is felt that this later figure more accurately indicates the states participation in Student Aid.

5. STUDENT LOANS

As noted earlier, loans provide a way to avoid making post-secondary education available only to the wealthy or of requiring massive scholarship and grant aid from tax dollars, in order to assist those whose family incomes are insufficient to meet the high and rising costs of post-secondary education. Low-cost, long-term loans to be repaid after the student completes his education shift the cost of higher education from the student's family, who presently must pay it during a four or five year period, to the student himself, who may pay it over a considerably longer period when the investment in his education is yielding a return out of which the cost may be met. When combined with some "income-contingent" features, which provide a safety valve to protect those who enter public service professions or for whom the post-secondary educational experience is under or non-productive (particularly for those who enter their post-secondary institution as educationally deprived students), the loan option may receive even greater acceptance by the student.

From the point of view of government, a fiscally sound student loan program, properly designed, financed and administered, can be the least expensive means of assuring that no student within its jurisdiction who desires a post-secondary education will be denied the opportunity solely because of inadequate financial means. The cost to government of paying the relatively limited number of defaults on such loans pales by comparison to the cost of granting scholarships to an equal number of financially disadvantaged students.

The Federal Guaranteed Student Loan Program

The Higher Education Act of 1965 provides for the implementation of the Federal Guaranteed Student Loan Program. Generally, the federal act authorizes the United States Commissioner of Education to: 1) encourage state and private non-profit agencies to establish loan insurance programs for students attending eligible post-secondary educational institutions; 2) provide a federal loan insurance program for students or lenders who do not have reasonable access to a state or private non-profit program; 3) pay a portion of the interest to the lender on behalf of qualified student borrowers; 4) reinsure a portion of each loan guaranteed under a program of a state or private non-profit agency; and 5) provide for the payment of a "special allowance" to lenders.

Methods of Utilizing the Federal Program

1. State Agencies - Twenty-five states and the District of Columbia currently operate agencies which guarantee loans made generally by banking institutions, credit unions and pension funds to qualified students attending eligible institutions of higher education. Twenty-one of these agencies operate their programs directly. In New York, for example, the program is administered by the New York Higher Education Assistance Corporation ("NYHEAC"), a public non-profit corporation created by an Act of the New York Legislature in 1957.

2. United States Aid Funds, Inc. - Five states have contracted with the United States Aid Funds, Inc., a private non-profit agency, to administer their programs. For example, South Carolina, by Act of the State Legislature in 1966, entered into such a contract. Guarantee reserves, initially provided by the federal government but since 1969 provided by state appropriations, have been deposited with the United States Aid Funds, Inc. which, in turn, guarantees participating lenders against defaults on student loans.

3. Direct State Loans - Texas and Wisconsin have programs of direct state loans to students. The federal act authorizes the Commissioner to pay interest benefits on behalf of eligible students and to reinsure such loans against default.

4. Direct Federal Insurance - In each of the remaining states, including the State of Washington, the Commissioner has established, pursuant to the authority granted him in the federal act, a program of direct federal insurance of student loans made by lending institutions to eligible students. Under these programs, the Commissioner enters into agreements directly with lending institutions to insure 100% repayment of the loans.

Seed Money

Federal advances are provided to help establish or strengthen the reserve funds of approved state student loan programs. These "seed money" advances are non-interest bearing loans which must be repaid as the Commissioner deems appropriate in light of the maturity and solvency of the reserve fund for which the advance was made. New York State, for example, received $1.5 million which it has not been required to repay.

Reserve Funds

Most agencies have established reserve funds to guarantee loans made by participating lenders. The majority, including until recently New York, use a 10% reserve, but reserve ratios range from 3% to 20%.

Reinsurance

State and private non-profit agencies contract with the Commissioner whereby 80% of the loans guaranteed by the agency are reinsured by the federal government. Since federal reinsurance reduces the agency's potential liability as a result of a default to only one-fifth of the loan's outstanding balance, the agency's reserve fund will support the guarantee of student loans with aggregate principal balances five times greater than if there were no reinsurance and the agency were liable for the entire amount of the default. Reinsurance agreements are currently effective in 23 states and the District of Columbia.

Eligible Educational Institutions

Currently, 3,895 colleges and universities, in the United States and overseas, are eligible under the provisions of the federal act. In addition, there are 3,451 eligible vocational, technical, business, and trade schools, including proprietary as well as public and non-profit private institutions.

Operating Procedures and Requirements

1. Loan Procedures - Students, including part-time students, may apply to a participating lender for a student loan. The student and his family complete a portion of the application (which includes the adjusted family income).

   The application is then sent to the school or college, which must certify: (a) that the applicant is enrolled, or has been accepted for enrollment, (b) that he is in good academic standing, (c) that his estimated educational expenses are reasonable, and (d) the amount of other financial aid made available by or through the institution.

   If the lender agrees to make the loan, the application is sent to the appropriate guarantee agency for a commitment to insure the loan. The funds are then disbursed by the lender. The loan may be paid directly to the student, or the check may be sent directly to the school or college for payment to the student.

The Act provides that no student may be denied a federally guaranteed or reinsured loan on the basis of family income or lack of financial need. However, if the adjusted family income of the student is less than $15,000, the Commissioner is authorized to pay all or a portion of the interest on his loan to the lender on behalf of the borrower while he is in school (see 7. below).[1]

2. Amount of Loans - Under the regulations of the guarantee agencies, maximum amounts and terms may vary, but under all programs, the maximum may not exceed $2,500 per academic year.[2] The total aggregate loan outstanding may not exceed $7,500 over the term of a student's four year education, or if the borrower attends graduate school, $10,000.

3. Repayment - Repayment of the loan is over a period of not less than 5 nor more than 10 years beginning not earlier than 9 nor more than 12 months following the date on which a student ceases to be enrolled on at least a half-time basis at an eligible institution. However, as the federal act requires the student to repay at a rate not less than $360 a year, the actual repayment terms will depend on the student's total indebtedness. Principal payments need not be made by the borrower while he is a member of the Armed Forces, a volunteer in the Peace Corps or VISTA or for any period during which he is pursuing a full-time course of study at an eligible school.

4. Maximum Rate of Interest - The maximum rate of interest payable on the loan is set from time to time by the Commissioner. At present, it is 7%.

5. Default - If a student fails to make an installment payment when due, or to comply with other terms of the note, and if this condition is not corrected within 120 days, the loan may be declared in default.

   The federal government and most agencies guarantee payment of 100 percent of the principal outstanding at the time the loan enters into default. Some state agencies, however, guarantee only 80 or 90 percent of the loan, with the lender assuming the remaining liability.

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[1] Amendments enacted in 1972 to the Federal Act would substitute a "need test" for the "adjusted income test" to determine whether a student qualifies for an interest subsidy. P.L. 92-318. The complexity of the new test and adverse reaction to its results led Congress to suspend its applicability until March 1, 1973 in order to permit the appropriate Congressional Committees to re-examine the proposed change.

[2] The $2,500 annual maximum permitted by the 1972 amendments to the Federal Act has also been suspended until March 1, 1973. In the interim, the former annual maximum of $1,500 is applicable.

6. Death and Disability - The Commissioner of Education pays the total amount owed by any eligible borrower who dies or becomes permanently and totally disabled. This is applicable for both loans guaranteed by a state or non-profit private agency or insured by the Commissioner.

7. Interest Benefits - While the student is in school, during the maximum 12 month grace period, and during periods of authorized deferment, the federal government pays the total interest up to the maximum 7 percent for those students whose adjusted family income is less than $15,000 per year.[3] During the loan repayment period, the student will assume the total interest charges. Students who do not qualify for federal interest benefits may borrow, but they must pay all of the interest on the loan.

8. Special Allowance - When economic conditions threaten to impede the program and the return to lenders is found to be less than equitable, the Secretary of Health, Education and Welfare may authorize a Special Allowance to be determined and paid to lenders on a quarterly basis. The rate may not exceed 3 percent per annum and is calculated on the average quarterly unpaid principal balance of all loans disbursed after August 1, 1969. The Special Allowance is presently being paid to lenders.

The National Experience Under the Federal Program

As of the end of the third quarter of 1971, nearly 3.5 million student loans have been made under the federal program, amounting to $3.15 billion. 81.2% of these loans were made by commercial banks, 8.4% by savings banks and 4.1% by states through direct lending programs. The majority of the borrowers came from middle income families; the adjusted family income of 50% of the borrowers was between $6,000 and $15,000; 4% had adjusted family incomes over $15,000. 62% of the borrowers were male; 75.3% were single; and 87.1% were white. The cumulative default ratio for the nation as a whole is 4%.

The Experience of a State Loan Guarantee Agency: New York State

The New York Higher Education Assistance Corporation operates the largest individual student loan guarantee program in the nation. Its program, which commenced in June 1958, preceded by 7 years the federal act. By June, 1972, NYHEAC estimates that it will have guaranteed $1 billion in student loans. At the end of fiscal year 1971, 390,000 students held approximately 800,000 loans, totaling $680 million guaranteed by NYHEAC. Approximately 200,000 borrowers holding loans are attending school; the balance of the borrowers are in the process of repaying, in military service or are permitted to defer repayment for other reasons.

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[3] For the purposes of applying the "adjusted income test", the income of a student's family is attributed to the student, for these computations, only if he resides with his family, he receives more than $600 annually from them, or he is claimed by them as an exemption for federal income tax purposes.

Seventy-five percent of the borrowers attend in-state schools; 25% attend school out of the state. 35.8% attend public universities within the state. 91% of the borrowers attend colleges and universities; 9% attend vocational institutions.

A slightly lower percentage of NYHEAC's loans are held by students of middle income families than is true on a nationwide basis. The adjusted family incomes of 47.5% of the borrowers is in the $6,000 to $15,000 range, while 4.6% earn more than $15,000.

The cumulative default ratio based on students who are subject to repayment or have repaid is 4.6%. However, the loss ratio is projected to be only 2.8%.

The New York experience indicates that there are two areas of higher than normal default risk: (1) certain vocational schools such as cosmotology and trade schools, and (2) entering students who have been educationally deprived and who do not survive their first year.

The appropriation to NYHEAC for fiscal 1972-73 to restore its reserve fund in light of projected defaults and to cover its administrative expenses was $2.46 million. This appropriation should be substantially reduced in the future since NYHEAC's legislation was amended during the past legislative session to authorize it to charge borrowers the one-half percent insurance premium charge permitted under the federal act.

The Experience of a State Direct Loan Agency: Texas

The State of Texas is the second largest lender under the federal program; the Bank of America is first. Its program, which was authorized by an amendment to the Texas Constitution, commenced in 1966 and is financed by the sale of

State of Texas College Student Loan Bonds (General Obligation Bonds). To date, $115.5 million of bonds have been issued.

As of March 31, 1972, a total of 245,523 loans have been made to 78,990 students, totaling $91,441,640, of which $10,160,511 has been repaid.

The net effective interest rate on the Texas bond issues range from a low of 3.77% in 1977 to a high of 6.25% in 1970, leaving a "spread" between the cost of the funds to the State and the yield it realizes on the student loans of from .75% to 3.33%. In addition, for fiscal 1971-72, its earnings on its investments totalled $4.75 million.

3.08% of the Texas student loan portfolio has been turned over to the State Attorney General for collection. Less than 1/2 of 1% of that portfolio is actually in litigation.

The Modified Deferred Tuition Concept: The New York Plan

Governor Rockefeller recently signed legislation which is designed to create a mechanism, administered by a state agency, to permit students attending public and private post-secondary educational institutions within the State of New York to defer payment of a portion of their educational expenses until after graduation. That mechanism seeks to acheive a a variety of goals.

1. To permit all colleges and universities within the state -- both public and private -- to participate.

This effectively rules out plans modeled on those proposed by Yale and Duke Universities, because only institutions with substantial endowments can implement that type of plan. In effect, under the Yale and Duke plans, the educational institution borrows the funds from banking institutions, becomes the primary obligor and reloans the moneys to the students. Thus, the effectiveness of such plans depends upon the ability of the institution to borrow large amounts of money from the private banking system and to accept the risk of loss from defaults on repayments by the students.

2. To permit all students attending a participating college or university to take advantage of the deferred tuition plan, regardless of the state of residence.

It was concluded that from the standpoint of the educational institution -- and particularly of the private college or university with a substantial out-of-state enrollment -- the program would be of little assistance if the deferred tuition program were available only to students whose residence was New York State.

3. Not to rely on any substantial subsidy from the state or its localities.

It is recognized that no such moneys for this purpose are likely to be available in the state budget for the foreseeable future. Consequently, the program was structured for the mechanism to be self-sustaining and the risk of loss from defaults to fall primarily elsewhere than on the state, its agencies, or subdivisions.

4. To create a program which, it can be clearly demonstrated, is self-sustaining.

The program is designed to be financed by the sale of tax-exempt bonds in the private capital market. Therefore, investors must be convinced that the program provides a fiscally sound basis for the repayment of their investment. Concepts such as the Ford Foundation's Pay-As-You-Earn (PAYE) "income contingent" repayment plan were investigated. Under these plans, a student borrows a fixed amount and agrees to repay a specified percentage (per $1,000 borrowed) of his yearly income until his loan is repaid in full, with interest, or until he reaches the maximum specified repayment period, whichever comes first. Borrowers who reach the maximum repayment period and still have outstanding balances are forgiven these amounts. The plans are designed so that anticipated early pay-offs by borrowers who earn substantial incomes will make up losses sustained through the forgiveness of the outstanding balances owed by financially unsuccessful borrowers.

At present, there is no satisfactory evidence that the gains achieved from early pay-offs will in fact equal the losses resulting from the loan forgivenesses. Accordingly, it was concluded that, for the moment at least, private investors could not be convinced that such plans will be self-sustaining. Utilization of such plans or variations of them, therefore, was rejected.

The New York Plan From the Educational Institution's Viewpoint

The program embodied in the recently enacted New York legislation will permit any student attending an in-state institution of higher education to sign a note payable to his school for his tuition, fees, room and board ("deferred educational costs") in an amount not in excess of that eligible for re-insurance under Federal Law; at present, that amount is $2,500 per year, $7,500 over the term of a student's four year education and $10,000 if the student attends graduate school. The legislation is structured to take advantage of proposed increases in the federal limits.

The participating institution will not actually disburse any funds to its students. It will accept the student's note in payment of that portion of his financial obligation to the institution equal to the deferred educational costs.

The participating institution will then contract to sell the student notes to an agency of the state which will issue tax-exempt bonds on the private capital market to raise the necessary funds for their purchase. Since the State of New York Mortgage Agency ("SNYMA") is presently engaged in purchasing home mortgage loans from banking institutions -- which is directly analogous to the deferred education cost program -- the Legislature selected SNYMA to act as the agency to purchase the student notes.

As a result of the sale of the notes to SNYMA, the educational institution will receive an amount equal to the aggregate face value of all the notes sold. SNYMA will be the owner of a portfolio of student notes as security for, and a source of payment of, its bonds.

Under existing state and federal programs, each student note will qualify for a 100 percent guarantee by NYHEAC. In turn, the note will qualify for 80 percent reinsurance by the federal government. In effect, then, the program shifts 80 percent of the risk of any net loss from defaults to the federal government.

The proposed program is fully voluntary insofar as educational institutions are concerned. Each must make its own decision whether or not to participate.

Accordingly, there is the possibility that some students who reside in New York State might be unable to participate in the program. Such a result might occur because a student attends a non-participating, in-state school or an out-of-state school and cannot get a loan from a bank under the program as presently administered by NYHEAC.

To correct this possible inequity, the legislation authorizes SNYMA to (a) buy student loans from banks in order to encourage them to participate in the NYHEAC program and (b) as a last resort, to make loans directly to students who otherwise would be unable to get the funds.[4] In either case, the loan will qualify for a 100 percent quarantee by NYHEAC and 80 percent reinsurance by the federal government.

The New York Plan From the Student's Viewpoint

The student's deferred educational costs will bear interest at a rate no higher than 7 percent per annum. If the student's adjusted family income does not exceed $15,000 annually, the student will pay no principal and no interest while he is in school.[5] The interest payments during that period are payable by the federal government under the federal program.

If, on the other hand, the adjusted family income of the student exceeds $15,000, the student will only pay interest while he is in school. The legislation is drafted so that if Congress raises the $15,000 income-test for eligibility for interest subsidies, the state program can be raised accordingly.

Repayment of the student's deferred educational costs will commence only after his education has been completed for 9 months. The deferred educational costs are repayable over a 10-year period. Again, the legislation is drafted to permit the state to administratively take advantage of any liberalization by Congress in the repayment terms of its guaranteed student loan program, e.g., an extension of the repayment period.

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[4] It was concluded that SNYMA should be a lender of last resort for two reasons. First, it was decided that the new program should interfere as little as possible with the existing NYHEAC guaranteed bank loan program. Second, the fewer loans which SNYMA makes directly, the lower its administrative costs.

[5] See Footnote Page 5.

Income Contingent Aspects of the New York Program

The legislation is flexible enough to encompass certain aspects of the "income contingent" proposals made by the Ford Foundation. First, although the program clearly contemplates a fixed schedule of repayments by the student borrower, the legislation permits SNYMA to program the periodic payments to start at a relatively low dollar amount and to gradually increase in amount in step with the predicted income of the borrower.

Second, SNYMA is authorized, within its available funds, to suspend -- indefinitely if necessary or advisable -- repayment of loans. For example, SNYMA is permitted to fix income minimums so that until a borrower reaches that income level, he is not required to commence repayment of the loan. This feature is designed to attract students from low-income families or students who plan public service careers and who have serious concern whether their incomes will reach a level sufficient to repay the indebtedness.

The legislation also authorizes SNYMA, within its available funds, to reduce or suspend scheduled payments if such payments would exceed a certain percentage of the borrower's income.

These income contingent aspects of the proposal will be funded either from state or federal grants, private gifts or, most likely, from the difference between the rate at which the Agency can borrow its money in the private tax-exempt market and the 7 percent rate it receives on its loans. In the opinion of financial advisors consulted by the legislation's draftsman, SNYMA can reasonably expect an average spread of at least one percent between the rate it pays for its money and the rate of return it realizes from the student loans. In other words, for each $100 million in deferred educational costs outstanding, SNYMA can expect to make at least one million dollars annually to pay its operating expenses and to fund the income contingent aspects of the program.

Advantages of the New York Program

1. The program offers an additional, rather simple method to help students finance their higher education, using educational institutions themselves as the conduit. It does so at little or no cost to state taxpayers or to the participating institutions, since it piggybacks on other, already existing state and federal programs.

2. The proposal adds new flexibility to existing student loan programs by (a) allowing state standards for student loans to "float" with any liberalization enacted by Congress in its student loan guarantee program; and (b) providing a method for implementing the income contingent features mentioned above.

3. In some ways, the program is more attractive than the income contingent plans proposed by the Ford Foundation and implemented by Yale University. This is so because under the legislation, borrowers who achieve relatively early economic success are not directly subsidizing borrowers whose incomes fail to reach a level sufficient to repay their loan, as is true under the latter plans.

4. The proposal taps an entirely new source of capital to help finance higher education within the state, i.e. the private tax-exempt bond market.

The Federal Student Loan Marketing Association

The Higher Education Act of 1972 authorizes the creation of a Federal Student Loan Marketing Association ("Sally Mae"), a United States government sponsored, private corporation. The affairs of the corporation will be managed by a 21-member Board of Directors, 7 of whom ultimately will be elected by the participating educational institutions and 7 by participating financial institutions; the remainder of the Board members will be appointed by the President. Section 438 of that Act provides:

> "The Association is authorized, subject to the provisions of this section, pursuant to commitments or otherwise, to make advances on the security of, purchase, service, sell, or otherwise deal in, at prices and on terms and conditions determined by the Association, student loans which are insured by the Commissioner under this part or by a State or non-profit private institution or organization with which the Commissioner has an agreement under section 428(b) (the Federal Student Loan Guarantee Program)."

It is impossible to predict how that authority will be implemented. The statutory language appears broad enough to permit a program on a national level similar to the New York modified deferred tuition plan. On the other hand, it is equally possible to administer the statute merely as a secondary market for the purchase of student loans from financial institutions, in the same manner as the Federal National Mortgage Association ("Fanny Mae") operates with respect to home mortgages.

Student Loan Options Available to the State of Washington

1. Direct Loan Program

(A) The State Legislature may authorize an existing state department or agency to issue General Obligation Bonds of the State of Washington and to lend the proceeds to qualified students attending authorized, post-secondary institutions. Such loans would qualify for 80% federal insurance.

(B) The State Legislature may create a public benefit corporation authorized to issue tax-exempt bonds backed by the "moral obligation" of the state for the same purpose.

This alternative has the possible advantages of not requiring a Constitutional amendment or test litigation to finally determine its constitutionality, nor the use of the state's credit to raise the necessary funds.

2. State Guarantee Program

(A) The State Legislature may authorize a contract with United States Aid Funds, Inc. Such action will probably require the appropriation of an amount sufficient to fund a reserve to guarantee defaulted loans and a continuing obligation to pay that portion of the cost of administering the program which is not covered by the one-half percent insurance premium charge permitted to be imposed on each borrower by the federal act.

(B) The State Legislature may enact a bill along the lines of House Bill #412 introduced during the 1972 session of the Washington State Legislature. In essence, House Bill #412 would create a public benefit corporation to be known as the Washington State Higher Education Assistance Agency ("Agency"), to guarantee student loans to Washington residents made by private banking institutions. Its 20 member Board of Directors would consist of the Superintendent of Public Instruction, 3 members appointed by the Governor, 8 appointed by the President pro tempore of the Senate and 8 appointed by the speaker of the House of Representatives. The Agency's guarantee would be backed by a guarantee fund.

House Bill $412, as introduced in 1972, appears to be unduly specific in its limitations; indeed it is more restrictive than the existing federal act. For example, while the federal act permits student loans up to $2,500 per year, #412 would restrict the amount which may be borrowed annually to $1,500. A better approach may be to authorize the Agency to guarantee loans within the limitations imposed by the federal act.

Another variation on the proposal contained in #412 which might be considered is to substitute for the guarantee fund a state "moral obligation" to annually appropriate the amount of the anticipated defaults for the coming year, as was recently enacted in New York State.

The advantage of using the "moral obligation" approach -- assuming its legality and acceptance by participating financial institutions -- is that it does not require the appropriation of substantial sums by the state which are then held in a fund that, although not presently needed, may not be used for other current state purposes. The "moral obligation" language enacted by New York State and accepted by its participating financial institutions, is as follows:

> "In order further to assure the payment by the corporation to lending institutions for defaulted loans in the respective amounts as guaranteed by the corporation pursuant to contracts, there shall be annually apportioned and paid to the corporation such estimated amount, if any, as shall be certified by the Chairman of the Board to the Governor and Director of the Budget as necessary to provide for the payment of all defaults for the next ensuing state fiscal year. The Chairman of the Board shall annually, on or before December first, make and deliver to the Governor and Director of the Budget his certificate stating the estimated amount, if any, required to pay defaults for the ensuing state fiscal year, if any, and said sums shall be apportioned and paid to the corporation during such fiscal year."

The major advantage to be gained by the State of Washington from the creation of such an Agency is greater control over the development, direction and administration of student loan programs within the state.

3. A Mechanism to Implement a Modified Deferred Tuition Concept

The State Legislature may create a public benefit corporation authorized to issue tax exempt bonds backed by the "moral obligation" of the state and to use the proceeds to purchase guaranteed student loans from eligible colleges, universities, other post-secondary educational institutions, financial institutions, credit unions and pension funds and, where guaranteed student loans are not available from the private banking system, to make them directly to student borrowers, subject to state and federal guarantees.

This public benefit corporation could operate similarly to the New York Plan, with appropriate modifications to meet the educational, fiscal and political needs of the State of Washington. In addition to greater control over the development, direction and administration of student loan programs, such a public benefit corporation might bring to Washington the advantages described in the discussion of the New York Deferred Tuition Plan.

6. SOME OPTIONS FOR WASHINGTON

The financing options that appear immediately amenable to the State of Washington fall into two principal categories: pricing options and alternatives for student aid. This section examines likely courses of action in these areas in concrete terms. The cost implications of alternatives are computed wherever possible, but in highly simplified form. No attempt has been made to construct a computerized model of the state's financing of higher education. Such an effort is well beyond the scope of this study, but offers a course of action that should be taken if precise and confident planning is to be achieved in the future.

Our costing efforts have been confined to the determination of the effects of single variables. They are sufficiently accurate to permit comparison among options, and look only at costs that will be affected by the choices made.

In order to be consistent we have based all computations on the year 1971-72 (except for cost data, for which 1970-71 figures are the latest available). Thus any computation below should be taken as saying, "if we had done thus-and-so in 1971-72, the costs would have been this much, or this much more than the way we did it". Furthermore, to keep the analyses reasonably simple we have concentrated mainly on options at the undergraduate level, at which 90 percent of Washington's post-secondary students are enrolled. Problems at the graduate level differ in many ways from college level work, and would require separate study once basic principles are established.

Modifying the Present Pricing Structure

Washington's system of financing fits what was referred to in Section 3 as a conglomerate model, with a mix of institutional and student aid, but with tuition on the low side when compared with most other states. Probably the greatest shortcoming of the system (and not just the total level of funding which, as noted earlier, has created serious problems) is the failure of student assistance funds to grow along with the rise in tuition and living costs. This fact was noted in the 1971-73 budget message, and brought sharply to our attention by student aid officers at the institutions. Now the just-completed Student Resources Survey provides data that permits some estimate of the shortfall. The study itself finds that 28 percent of respondents report a gap between costs and available resources. The cumulative amount of the gap, projected to the entire state student population, was $36 million.

In order to assess the validity of this figure, we computed the financial aid requirement for all Washington students using the student budget standards employed in administering the Washington need grant program, and the College Scholarship Service computation of expected family contribution based on family income data developed in SRS. We also used a self-help figure of $600, representing the high end of the range of expected savings from summer earnings. Our calculation showed a need of $96.8 million per year in student aid for all students at all institutions. Projected SRS results show students receiving some $71.4 million in aid, for a gap of $25.4 million. We should note that computation of the gap in this way underestimates individual shortfalls, since it does not compensate for students who receive more aid than their calculated need would indicate. It appears that the need for added student financial aid is between some figure larger than $25.4 million and $36 million, a rather wide discrepancy, and one that needs refinement through further study. It should be noted that the SRS results represent the first such systematic study of student aid, and opens the door to reconsideration of many previously accepted standards.

Two points need special emphasis. Of the $71 million in aid reported in the above computation, over $23 million was in the form of loans. Of the $48 million in grants and scholarships, only a minor fraction was in state funds: $600,000 in need grants and about $1.5 million in tuition waivers. Small amounts were in institutional and local aid funds. The bulk of aid funds came from federal sources, many of them special purpose awards that allow little flexibility to aid programs.

In summary, if the present pattern of tuition and financing is maintained, added student aid funds will be required if open access is to be achieved. The nature and source of such funds is discussed below when we consider the mix of elements in a financial aid "package".

Full Cost Pricing

Table 3 shows the computation of present student aid requirements and the amounts that would be needed under higher pricing at state colleges and universities for the student population being considered here. As noted earlier, we are confining the consideration of pricing options to full-time

Table 3

COMPUTATION OF STUDENT AID REQUIREMENTS UNDER ALTERNATIVE PRICING PATTERNS

(Confined to Washington Undergraduate Resident Students Treated as Living Away from Home)

			PRESENT PRICING PATTERN					FULL COST PRICE			75% OF CURRENT COST PRICE		
	Family Income (000)	% in Income Bracket	No. Students in Bracket	Expected Parental Contribution	Student Budget	Aid Needed Per Stu.	Total Aid Required (000)	Student Budget	Aid Needed Per Stu.	Total Aid Required (000)	Student Budget	Aid Needed Per Stu.	Total Aid Required (000)
UNIV.	0-6	15.8	5,112	0		1830	9,355		2987	15,270		2485	12,703
	6-9	13.0	4,206	391	1935	1439	6,052	1935	2596	10,919	1935	2094	8,807
	9-12	16.3	5,274	1012	+495	818	4,314	+1652*	1975	10,416	+1150	1473	7,769
	12-15	16.5	5,339	1559	2430	271	1,447	3587	1428	7,624	3085	926	4,944
	15-21	20.2	6,536	2571	- 600		21,168	- 600	416	2,719	- 600		34,223
	21+	18.2	5,888	3364	1830			2987		46,948	2485		
		100.0	32,355										
ST. COLL.	0-6	15.8	3,543	0		1782	6,314		2835	10,044		2405	8,521
	6-9	13.0	2,915	391	1935	1391	4,055	1935	2444	7,124	1935	2014	5,871
	9-12	16.3	3,655	1012	+447	770	2,814	+1500*	1823	6,663	+1070	1393	5,091
	12-15	16.5	3,699	1559	2382	223	825	3435	1276	4,720	3005	846	3,129
	15-21	20.2	4,528	2571	- 600		14,008	- 600	264	1,195	- 600		22,612
	21+	18.2	4,081	3364	1782			2835		29,746	2405		
		100.0	22,421										
C. C.	0-6	22.0	14,378	0		1584	22,775		2445	35,154		2075	29,834
	6-9	16.0	10,457	374	1935	1210	12,653	1935	2071	21,656	1935	1701	17,787
	9-12	17.5	11,438	1012	+249	572	6,543	+1110*	1433	16,391	+740	1063	12,159
	12-15	16.7	10,915	1538	2184	46	502	3045	907	9,900	2675	537	5,861
	15-21	16.1	10,523	2628	- 600		42,473	- 600		83,101	- 600		65,641
	21+	11.7	7,647	3363	1584			2445			2075		
		100.0	65,358										
				TOTAL AID REQUIRED –			77,649			159,795			122,476

* = Full current cost + local "tuition"

** = Current aid received by this population based on SRS findings = $55,793,000 equivalent (FTE) undergraduates, and here further restrict it to Washington residents, who actually make up 94 percent* of the undergraduate enrollment in public institutions. Out-of-state students are omitted not only to simplify computations, but because these students are already paying a substantially higher tuition which would not change greatly under the formulae presented here.

Full cost pricing should include the cost of instruction and some share of capital cost as well (see Section 2). For cost of instruction we used the full cost figures developed by the Council on Higher Education.

Accounting practice in colleges and universities does not recognize amortization or depreciation of capital facilities -- a puzzling and regretable departure from general practice -- which makes cost accounting very difficult. Rather, buildings are treated as gifts from government or donors. We considered it it important to recognize capital cost, so included in our tuition price the amount paid by students toward local bond retirement and construction funds and identified as "tuition" under Washington practice. The sum, which ranges from $75 at state colleges to $124.50 at community colleges for in-state students, is considerably lower than real capital costs.

The new revenue produced under full cost pricing at public institutions, again using primarily 1971-72 data, would be as follows:

	Full Cost Tuition	Existing Tuition & Fees	Increase in Tuition	In-state FTE Students	Increased Revenue
Universities	$1652	$495	$1157	32,355	$ 37,435,000
State Colleges	$1500	$447	$1053	22,421	$ 23,609,000
Community Colleges	$1110	$249	$ 861	65,358	$ 56,273,000
			Total New Revenue:		$117,317,000

Table 3 shows that, under full cost pricing, $160 million would be required to meet the computed need of all undergraduates who qualify for aid. This is an increase of

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*Data on the proportion of in-state students is available only on a headcount basis. We were compelled therefore to apply these figures to total FTE figures in order to estimate the number of in-state FTE students for our computations. If, as we assume, out-of-state students take a full course load, then the FTE enrollment of resident students will be slightly overstated. However, if a reasonable percentage of out-of-state students

$82.1 million over need under existing pricing. Thus full cost pricing would generate $117.3 million in new revenue, and $82.1 million in new financial aid obligations, for a net increase in revenues available to the state of $35.2 million. These figures assume, of course, that the state will continue the present level of funding for other-than-instructional purposes, and that the existing aid shortfall of students in public institutions will be made up regardless of the pricing plan selected.

A part of this projected $35.2 million in new revenue could be used to provide additional aid to Washington students attending independent institutions. The amount would be determined by the degree to which the state chooses to "equalize" tuitions between public and private institutions. Our computations show that the cumulative current need of students at private institutions is $18.1 million, against which they receive $9.6 million in grants, leaving a need gap of $8.5 million. Since 61% of private institution students are Washington residents, we assume that the need gap for residents is 61% of $8.5 million, or $5.2 million.

Remaining new revenues could be utilized to increase support for services which are not likely to be user-funded (basic research, innovations in instruction and services, remedial programs), to finance additional construction, to forward-fund increases in items which are part of instructional costs (faculty positions and salaries, libraries); or of course to reduce state appropriations and taxes. A proposal in Wisconsin, where full cost pricing is under consideration, is to grant minimum $500 awards to all students, which has the effect, of course, of reducing tuition by $500; such a step in Washington would consume some $25 million of the projected revenue increase.

A factor that must be kept in mind in evaluating the effect of a full-cost pricing/full-need-grant program is the net change in the total number of students in the system. Some upper income students who do not qualify for aid may leave the system; probably a larger number of lower income students would enter or continue in the system, for a net increase in enrollment entirely at the high-need end of the spectrum. We have no valid way of estimating the number, but we can report that Wisconsin, with about a one-third larger population than Washington, estimated that from 3,000 to 6,000 new students would be brought into the system by its proposed program. If Washington were to attract into its system 4,000 new students, all in the full-need range, it would cost the state some $10 million in added aid funds.

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take more than the normal course load, then the correspondence between headcount and FTE enrollment proportions will be very close. For our purposes the effect of the out-of-state populations on our calculations is minimal.

Another item that must be considered in the kind of program outlined is the cost of administration of an enlarged student aid program. Efficient state-aid programs are now run for about three percent of the amount administered. But this porportion is at the state level only; some additional cost would undoubtedly be experienced at the institutional level. If we assume that the increase in student aid resulting from a full-cost pricing program could total over $95 million, and the administrative costs would run to five percent at the state and local levels combined, then nearly $5 million of the new revenues would have to be earmarked for this purpose.

Before summarizing the estimated dollar consequences of this plan, we would like to reiterate and amplify some of the arguments against full cost pricing. First is the danger that increased charges will not be met by increased aid, thus driving low-income people from the system. Second is the concern that it leads to channeling funds through students, and may result in a net decrease in funds going to institutions. Colleges and universities would not be able to plan as intelligently and to staff themselves adequately if their income is subject to the whims of students who come and go. Another argument against this plan is that it has never been tried, and may have flaws that no one has anticipated. The only response to this concern is that any high cost pricing plan should be phased in over several years so that flaws can be detected.

Perhaps the most telling argument relates to equity, in a different sense than open access. Under full cost pricing, those in the higher income brackets, who are likely to be paying higher subsidies to post-secondary education through taxes, would be called upon to pay a high tuition, while those who may be paying less in taxes are relieved of paying in full for their education. This "double taxation" argument is troublesome, and politically significant since those who would be hurt by it tend to be articulate members of the electorate. It is, however, an argument with much greater significance in states which have, unlike Washington, a progressive income tax. One of the few steps that can be taken to cushion the effect of high tuition on the upper income population is to provide an openly available program of low-cost loans, as discussed in Section 5, and again below as an element in the student aid package.

Following is a summary of the fiscal consequences of a full-cost pricing model for Washington resident undergraduates, in millions of dollars.

	Increased State Income	Increased State Expenditures	Net Available To State
Revenue from higher tuition	$117.3 million		
Increased student need grants at public institutions		$82.1 million	
Administrative cost of grants at 5%		4.0	
	$117.3	$86.1	$31.2 million
Cost of aid for 4,000 new students		10.0	
Administrative cost on above at 5%		.5	
	$117.3	$96.6	$20.7
Cost of aid for private institution students if included		5.2	
Administrative cost on above at 5%		.3	
	$117.3	$102.1	
Amount available for new programs, etc.			$15.2 million

Some Cautions in Interpretation

The analysis of the revenue-expenditure relationship for full cost pricing above, and for partial cost pricing analysis that follows, has implicit in it several assumptions. These are:

1. Parental Contribution - Parents will be expected to contribute towards college costs from their income and assets an amount approximating the average contribution expected under national need analysis services rationale and procedures (the College Scholarship Service parental contribution curves were utilized).

2. Students are expected to contribute to their own educational costs from summer employment earnings (a $600 summer savings standard was utilized).

3. Full cost pricing will not cause a redistribution of students among two and four year institutions, public and private institutions, or in-state, out-of-state institutions.

Standard need analysis is usually performed from 2 to 8 months before the beginning of a new school year. It operates from a fairly strict basis that allows families a moderate standard of living and then expects that a substantial part of disposable income over that moderate standard will be available for college costs. Every study that has been conducted on parental contribution has identified the same pattern, i.e. low income families (under $6,000) contribute more than they are expected to, middle income families (up to around $12,000) will contribute about the expected amount, and higher income families substantially under-contribute. The Washington SRS study validated the existence of this pattern in Washington.

The reasons underlying the pattern are much more complex. There seems to be a growing unwillingness on the part of parents to alter their living style to finance college. Of the 10,000-plus respondents from public four year institutions in the SRS study, one-third reported no parental support and one-half reported support of under $400. Conversely, the CSS expectation tables computed a median expected contribution of over $1500, with only 15.6% of the students falling in the under $400 contribution category.

Although parental unwillingness is a consideration, it seems to be less important than one other factor: need analysis assumes parental contribution is the first and most basic source of a student's support. In practice, many parents seem to contribute that amount needed to fill the gap between the student's resources and the cost of college, and student resources are substantially higher than has previously been thought. The SRS four year public data found that 76.1% of all students in the sample reported working, with mean earnings of $1700 and median earnings in the $1000 to $1500 per year range. If a fair number of these students also borrow, it would take a relatively small parental contribution to meet the student's total budget needs.

The SRS study identified another pattern important to this analysis: within the same income range, the parental contribution increased as tuition and fees increased. For the $12,000 to $14,999 income range, the average parental contribution for community college students was $430, for students in senior public institutuions $620, and at independent institutions $840. (The CSS expectation at all institutions was approximately $1500.) Although parental contributior rises with tuition and fees, we do not know the degree to which parental unwillingness to contribute more dollars (or student unwillingness to accept the money) has influenced the student choice of a less expensive institution.

The foregoing simplified analysis of revenue and expenditures from full cost and higher cost pricing is a valuable demonstration tool, but the actual implementation of any such plan should be preceded by careful analysis of the following points.

1. Student Self Help - It would appear from the SRS data that students are at present paying more of their college costs than was previously believed. If tuitions are increased, a self-help expectation somewhat in excess of $1500 would appear reasonable.

2. Parents are not contributing the amounts expected under standard need analysis procedures. Increased tuitions would probably increase parental contributions, but not at a rate commensurate with the tuition increase.

3. Increased tuition will probably result in more parents and students seeking the student's emancipation. This could result in a drop in parental support for some students.

4. As tuition at public institutions approach those charged at independent institutions (and if aid is available to permit attendance at any institution the student chooses), then increasing numbers of students might elect to attend independent institutions (or out-of-state institutions if they have lower tuitions or if aid can be taken out of state). The changes in student choice patterns could cause some drop in public institution enrollments.

Partial Cost Pricing

A compromise position between the present policy and full cost pricing is one which sets tuition at some large fraction of full cost. This is essentially a conglomerate model, with high tuition, in which most institutional support comes from (or through) students, and a smaller part through direct appropriations to institutions. To illustrate the cost effects of the model we have assumed here a tuition equal to 75 percent of average current undergraduate instructional cost in each segment. The effects and arguments for such an approach closely parallel those for full cost pricing, and will not be repeated here.

The effect of the plan on revenues would be as follows:

	New Tuition 3/4 Current Cost	Existing Tuition	Increase In Tuition	Number of In-State Students	Increased Revenue
Universities	$1150	$495	$655	32,355	$21,193,000
State Colleges	$1070	$447	$623	22,421	$13,968,000
Community Colleges	$ 740	$249	$491	65,358	$32,091,000
					$67,252,000

Table 3 also computes the new need requirement, which comes to an increase of $44.8 million over present levels. Thus the three-fourths cost model would generate $67.3 million in additional income for a net of $22.5 million in new state funds.

Aid to private institution students, if made part of the plan, would remain at $6 million. We might still see 4,000 new students drawn into the system, since full aid is part of the plan, but the amount of their grants would be slightly lower than in the full cost example, since tuition is lower by an average of a little over $400. Total grant expense for this number of new students would be $8.4 million.

A summary of the effect of the three-fourths of full current cost pricing follows:

	Increased State Income	Increased State Expenditures	Net Available To State
Revenue from higher tuition	$67.3 million		
Increased student need grants at public institutions		$44.8 million	
Administration cost of grants @ 5%		2.0	
	$67.3	$46.8	$20.5 million
Cost of aid for 4,000 new students		8.4	
5% administrative cost on above		.4	
	$67.3	$55.6	$11.7 million
Cost of aid for private institution students if included		5.2	
5% administrative cost on above		.3	
	$67.3	$61.1	
Amount available for new programs, etc.			$ 6.2 million

Zero Tuition

The effect of widening acess by lowering tuition can best be demonstrated by costing out the extreme case -- lowering tuition to zero, with the state absorbing all costs except minor fees. In this example we again confine attention to FTE undergraduate in-state students, and assume that the state will pick up the obligation to pay off bonds which are backed by student payments.

Loss of revenue to the state would simply be the amount of tuition paid in each segment, as follows.

Universities	$495 x 32,355	students	=	$16,016,000
State Colleges	$447 x 22,421	"	=	10,022,000
Community Colleges	$249 x 65,	"		16,274,000
				$42,312,000

This loss could be offset by reductions in state aid, since lowered tuition reduces some of the need. But state aid at present amounts to only some $2.1 million, so even if it were entirely eliminated and credited against the $42.3 million less in revenue, the state would still be required to produce some $40.2 million in new institutional subsidies and bond redemptions.

Variable Pricing

Whatever the tuition level (above zero) chosen by the State of Washington, it is possible to adjust the tuition upward or downward at each student level, most likely to parallel changes in instructional costs at different levels, while keeping the weighted average tuition at the level selected. Such a shift to variable pricing then has little effect on the total financial pattern at the state level, though it will have effects on entry and retention of students at various levels as discussed in Section 3. It becomes more a matter of educational and social philosophy than of financial policy. Thus we leave the matter without concrete illustration in the Washington setting, but urge its exploration.

If variable pricing by level is seen as a worthwhile arrangement, we would further urge the state to consider the value of equalizing tuition by level across all public institutions in the state. Thus the lower division charges at the universities and state colleges would be the same as those at the community colleges; and upper division tuition would be the same at all four year institutions (we leave aside graduate tuition, since the topic has become complicated by a tendency to raise costs in expensive professional programs). The argument favoring uniform pricing in all institutions is that all students should have access to the same quality of education, wherever they enter the state public system, and that arbitrary differentials in tuition (and formula subsidies) tend to perpetuate quality differentials. The principal argument against such a course of action, of course, is that the different institutions do different things, should differ in quality unless all are to be pulled down to a common denominator, and require different levels of support.

A factor that must be kept in mind in assessing the effects of differential pricing by level is the forecast, reported in Section 1, that growth in the next decade will be disproportionately heavy in the community colleges. This increasing lower-division enrollment will have to be taken into account in balancing out charges at other levels to arrive at the desired total tuition income.

The Effect of Federal Basic Grants

The 1972 federal higher education legislation provides for a variety of programs to assist higher education. Until guidelines are adopted and funds are appropriated it is hard to determine just what effects the complex provisions of the new bill will have. Yet it is possible to make a distinction between the impact of institutional and student aid.

Most of the institutional programs will provide funds to pay for the kinds of things the states are already supporting -- general operations, libraries, equipment, etc. New funds will permit improvements at the institutions, reductions in state expenditures, or both. But the major financial decisions that will be put before the states have to do with how much they will want to spend for various purposes, not decisions regarding the whole fabric of financing.

The student aid provisions, by contrast, will have effects on pricing policy and state allocations of grants and loans. The new loan provisions, and the ways in which they can be employed to operate a student loan program at very small cost to the state, are discussed in Section 5. Existing federal aid programs are extended and enlarged, and funds are authorized to match dollar-for-dollar the amounts by which states will increase their own need-based aid programs. All of these will influence the amount of money available for student support, but it is the basic grant provision that will have the most direct effect on pricing policy.

Quite simply, the basic grant program, when and if fully funded, will provide $1400 per year to each post-secondary student, less the amount his family is expected to contribute under some standard formula; or one-half of the cost of attending college, whichever is less.

To indicate the importance of this provision to the State of Washington, note that Table 3 shows that there are over 23,000 in-state undergraduate students who would qualify for the full $1400 since they are in a family income category that calls for no parental contribution. In addition, some 38,000 students would qualify for partial aid, relieving the state of some of its responsibility. But it is the 23,000 entitled to full aid who are most important here.

Under the present pricing structure a community college student living at home will incur college-going costs of $1320 in maintenance expense (the figure now used in administering the state need grant program) and $249 in tuition for a total of $1569. He would be entitled to only half this amount -- $785 -- instead of the $1400 which the basic grant program provides, a loss of $715. If he were living away from home, as most students now do, his budget would be $1935 for maintenance plus $249 for tuition for a total of $2184 and a maximum basic grant of $1092 -- $308 below the full entitlement. The Table 4 computes the amounts that would be lost under a fully-funded basic grant program with the present tuitions. Student distribution figures are from the SRS data.

Table 4

LOSSES UNDER FEDERAL BASIC GRANT PROGRAM
BY STUDENTS FROM FAMILIES WITH INCOMES BELOW $6000/YR.

(1) Institution	(2) Residence	(3) Number of Students	(4) Annual Student Budget Including Tuition	(5) Maximum Basic Grant [(4)÷ 2]	(6) Loss per Student from Grant Entitlement [$1400 - (5)]	(7) Aggregate Loss for Washington Students [(3) × (6)]
University	home	511	$1815	$908	$492	$ 251,000
University	away	4601	2430	1215	185	851,000
State College	home	354	1767	884	516	183,000
State College	away	3189	[illegible]382	1191	209	667,000
Comm. College	home	4792	1569	785	715	3,426,000
Comm. College	away	9586	2184	1092	308	2,952,000

TOTAL LOSS OF ENTITLEMENTS FOR IN-STATE STUDENTS BELOW $6,000 PER YEAR FAMILY INCOME $8,330,000

It is not intended that the Table 4 computation show with precision the amount that would be lost under the present pricing pattern. Rather it is an indication of order of magnitude. It should be noted that, in addition to the above students from low income families, there will be students in the next higher income brackets who would lose out. The total lost would undoubtedly exceed $10 million for in-state undergraduates alone. If the state is to assure that all needy students receive assistance, this $10 million represents a net loss to its treasury.

To protect against any loss from underpricing, with present maintenance budgets, it would be necessary to raise the lowest tuition to $1480 so that home-resident students would show total budgets of $2800. Rising maintenance costs will undoubtedly take care of part of the increase, and it seems unlikely that any state would go to such a minimum tuition in the near future. But those computations do indicate a likely trend toward higher tuitions as a consequence of the new legislation in order to shift more of the burden of post-secondary education to the federal government.

The Financial Aid Package

Section 3 delineated the principal forms of student aid useable by Washington: 1) grants and scholarships, 2) work-study, and 3) loans. The first two call for cash outlays if the state is to make up for shortfalls in existing funding. These shortfalls now amount to between $19.8 million and $36 million, as reported above, and state aid expenditures could run as high as $100 million under full cost pricing.

Section 5 described some student loan plan alternatives open to Washington. It should be noted that these loan plans would not require state appropriations in amounts anywhere close to the sum to be loaned. Rather the capital is generated from other sources, and the state is called upon to cover only administrative and start-up costs. The State of New York for example, which already has a state loan mechanism in operation, estimates a first year cost of $300,000 for its very large loan program.

If the student aid package is made up of a mix of grants (and work-study) and loans, the state can reduce its outlay by the aggregate amount of loans included in need-based packages. Determination of the amount of loan each needy student is asked to assume is not simply a matter of how much the state wants to cut its outlay, of course, but depends on the amount a student can reasonably be asked to borrow. Present indebtedness and obligations, culture-based attitudes toward borrowing, and potential earning power are factors that must be considered in balancing the aid package. Financial aid officers must have freedom to adapt loan packages to individual needs, within broad guidelines.

One attractive student aid formula is to begin building the annual package with a "self-help" element of $1000 or $1500, to consist of earnings and loans in whatever mix the student prefers. Under such a plan the student has a stake in his education. Furthermore, it tends to reserve cash grants, which are always short of full need, for those who need them most since it has the effect of requiring middle income students, who qualify marginally for aid under the need formula, to borrow and work instead of relying on grants.

The privilege of borrowing need not be held to the self-help total, of course. Permitting students who do not qualify under need formulas to borrow would be an essential provision if tuition charges are to be substantially increased.

The Voucher or Portable Grant

The idea of providing students with chits that they can cash in for an education wherever they please has a great deal of appeal to reformers who would like to see institutions more responsive to learner needs. Federally sponsored experiments with the use of vouchers in pre-college education are about to get underway, and adaptation of the idea to post-secondary education is being widely discussed.

Some confusion exists as to just what a voucher system is. For our purposes, it is a system of portable grants, useable at many or any institutions, depending on the specifications. If a statewide public system has consistent guidelines for student financial aid, that state has, in effect, a voucher system for public institutions, since the student is free to attend anyplace he chooses (and qualifies), with the same aid amount wherever he goes.

A voucher system is not really a financing option, but a way of channeling funds (and students) once financing patterns are determined. It can function with any pricing plan, and with any aid level.

There are two major classes of variants of a voucher plan: where the voucher will apply and how it will vary with costs. The "where" question has three principal responses:

1. The voucher is usable at any public institution. As mentioned, this is really the same thing as having a consistent statewide aid policy in public institutions.

2. The voucher is usable at either public or private institutions in the state. The prior question is, does the state wish to subsidize private education, presumably in order to utilize existing private facilities instead of building additional public ones. If the state decides to subsidize privates, a voucher plan is one convenient device to channel the funds.

3. The voucher is usable anywhere. Here one possible purpose is to make it possible for more students to study outside the state, thus relieving pressure for expansion within the state.

Variation in the level of voucher payments is an important factor only under conditions 2 and 3 above, since total attendance costs usually do not vary greatly among public institutions. The major options are:

1. A voucher based on average tuition and costs at public institutions. Here the award is equal to (or some fraction of) these costs, less the amount of expected family earnings. If the student attends a public institution, his needs are largely met. If he chooses to attend a higher tuition private institution, he will have to come up with the tuition differential himself through earnings, borrowing or scrimping. This type of voucher is often associated with full cost pricing, with the entire state subsidy of instructional cost channeled through students.

2. Another option is the "blank check" model, which would provide for maintenance costs plus actual tuition at any institution chosen, again less family contributions and earnings. Such a plan provides maximum freedom of choice, but leads to the danger of private institutions raising their tuition charges unreasonably. Essentially it requires more faith in the efficiency and price-equitability of private institutions than most legislators are willing to accept.

Again, a voucher system is simply one way of carrying out the distribution of funds once certain financing, pricing, private institution support, and aid decisions are made.

Effects on Private Institutions

This report has dealt almost entirely with the public post-secondary system, because this is the only instrument for educating its citizens for which the state government is most immediately responsible. Clearly any decision affecting the public sector will have an influence on most private institutions. It is the two sectors taken together that make up the total system serving the population.

It is hardly necessary to point out that pricing policy, and the state's decisions concerning the amount and portability of student aid, will have profound impact on the private sector. If tuitions in public institutions rise, the privates are in an improved competitive position. If state financial aid is widely available to students in private institutions, either through portable grants or by extension of the existing tuition supplement program, the private institutions will be relieved of part of their financial aid burden. These steps would do much to insure the strength and survival of the private sector.

APPENDIX 1

Appendix 1 shows basic supportive data, used in the body of the report, regarding Washington's general expenditure support for higher education and the way it compares with other states mentioned in the report. Several of the tables are provided to indicate both how the current level of funding compares with other states and what the basic ability of persons in the state is to finance public programs. Since no two states have identical budget categories or accounting systems, certain differences in figures can be traced to different categories. However, certain general trends and comparative rankings can be understood.

TABLE 1: STATE AND LOCAL APPROPRIATIONS FOR HIGHER EDUCATION FOR FTE STUDENTS

This table represents total state and local expenditures for operating expenses of higher education divided by the number of FTE students enrolled. Since M.M. Chambers' figures were used forcomputations, the above comparison includes state support for scholarship programs but, as is standard, excludes capital appropriations. From all the data we have reviewed, these figures represent most adequately the level of support which a state is in fact giving its educational system, since it represents funds available in terms of the key beneficiaries of the educational system -- the students.

The table cannot, however, indicate the proportion of funds going to instruction, research, or scholarship agencies. It also does not reveal the level of participation in the higher educational system, nor the ability of the state's residents to finance their educational system.

TABLE 2: PERCENTAGE OF STUDENT ENROLLMENT IN PUBLIC INSTITUTIONS TO TOTAL POPULATION 1970-71

This table represents the level of participation of the state's population in public higher education. Since it refers to public higher education, it is not so indicative of student participation for eastern states, where private education predominates. However in Washington, with only 12% of all students in higher education attending private schools, it does indicate that a high level of total state and local expenditure is needed just to provide the education desired by its citizens. In short, higher levels of expenditure or more efficient use of facilities will be necessary in Washington just to match student expenditure levels in states which have fewer students.

TABLE 3: PERCENTAGE OF PRIVATE INSTITUTION ENROLLMENT TO TOTAL ENROLLMENT

These figures simply compare enrollment proportions of public and private institutions of higher education. It is to be expected that the predominance of private institutions is found in the eastern United States.

TABLE 4: STATE AND LOCAL APPROPRIATIONS FOR HIGHER EDUCATION PER $1,000 OF PER CAPITA PERSONAL INCOME

This table compares states as regards their basic ability to finance higher education, since it relates personal income to the size of the state population. Significantly, it does not include capital expenditure by the state and local governments. Since the figure represents only state and local expenditures, private philanthropic support for higher education, which in some states may be significant, is also not included. Most importantly, this percentage figure cannot be taken as an absolute since the size of the college age population will have a direct effect on the need for funds, as well the total personal income of the state and the age of its higher educational system.

TABLE 5: GENERAL FUND EXPENDITURES: HIGHER EDUCATION VS. TOTAL

This table indicates the relationship between higher education expenditure categories and total general fund expenditures. The table does not include expenditures for scholarship aid, which in 1970-71 equalled approximately $538,000, excluding tuition waivers. However, included as noted are various general fund capital expenditures. It is worth pointing out that the percentage of expenditures for higher education versus total expenditures is not a completely accurate indication of state support, since some general fund revenue is received from the federal government.

TABLE 1

Combined State and Local Appropriations for Higher Education Per Equivalent Full Time Student--1970-1971

	State	Appropriations Per Student		State	Appropriations Per Student
1.	Alaska	$3288	26.	Vermont	$1433
2.	New York	2718	27.	Ohio	1403
3.	Illinois	2457	28.	Wyoming	1400
4.	Kentucky	2132	29.	Missouri	1389
5.	New Jersey	1978	30.	Arkansas	1386
6.	Hawaii	1968	31.	Delaware	1360
7.	Pennsylvania	1930	32.	Arizona	1348
8.	North Carolina	1788	33.	Colorado	1343
9.	Georgia	1770	34.	Massachusetts	1337
10.	Wisconsin	1758	35.	West Virginia	1337
11.	Florida	1722	36.	Minnesota	1335
12.	Mississippi	1718	37.	Kansas	1332
13.	Connecticut	1717	38.	New Mexico	1258
14.	Iowa	1710	39.	Oregon	1250
15.	South Carolina	1691	40.	Texas	1242
16.	Maryland	1609	41.	Tennessee	1208
17.	Indiana	1597	42.	Nebraska	1179
18.	Washington	1588	43.	Virginia	1102
19.	California	1567	44.	Alabama	1101
20.	Maine	1546	45.	Montana	1086
21.	Rhode Island	1533	46.	Utah	1077
22.	Nevada	1531	47.	South Dakota	1018
23.	Michigan	1500	48.	North Dakota	936
24.	Louisiana	1476	49.	Oklahoma	894
25.	Idaho	1466	50.	New Hampshire	781

Average $1625

TABLE 2

Percentage of Student Enrollment in Public Institutions To Total Population--1970-1971

	State	Percent Enrolled
1.	North Dakota	4.42
2.	Arizona	4.35
3.	Montana	4.12
4.	Colorado	4.03
5.	Utah	3.95
6.	Hawaii	3.89
7.	Wyoming	3.87
8.	Oregon	3.84
9.	California	3.83
10.	Washington	3.70
11.	Kansas	3.38
12.	New Mexico	3.31
13.	Wisconsin	3.17
14.	Idaho	3.15
15.	South Dakota	3.15
16.	Oklahoma	3.06
17.	Michigan	2.94
18.	Nebraska	2.84
19.	Minnesota	2.83
20.	Delaware	2.73
21.	Texas	2.69
22.	Mississippi	2.61
23.	West Virginia	2.52
24.	Louisiana	2.42
25.	Missouri	2.30
26.	Vermont	2.30
27.	Maryland	2.27
28.	Rhode Island	2.24
29.	Florida	2.19
30.	Iowa	2.18
31.	Illinois	2.17
32.	Alabama	2.16
33.	Nevada	2.15
34.	Indiana	2.11
35.	North Carolina	2.10
36.	Ohio	2.10
37.	Tennessee	2.09
38.	Virginia	2.08
39.	Arkansas	2.07
40.	Kentucky	1.99
41.	New Hampshire	1.90
42.	Alaska	1.88
43.	Georgia	1.88
44.	Connecticut	1.85
45.	Maine	1.83
46.	New York	1.81
47.	South Carolina	1.61
48.	Pennsylvania	1.55
49.	Massachusetts	1.55
50.	New Jersey	1.28

Average 2.42

TABLE 3

Percentage of Private Institution Enrollment To Total Enrollment--1970-1971

	State	Percent Private Enrollment
1.	Massachusetts	63.6
2.	Rhode Island	58.7
3.	Vermont	47.2
4.	New York	45.3
5.	Pennsylvania	44.6
6.	Connecticut	41.6
7.	Utah	38.9
8.	Iowa	36.8
9.	New Jersey	36.0
10.	South Carolina	33.8
11.	Maine	32.6
12.	Illinois	31.2
13.	North Carolina	30.9
14.	Indiana	30.6
15.	Tennessee	29.8
16.	Missouri	28.2
17.	New Hampshire	27.5
18.	Ohio	26.1
19.	Nebraska	24.8
20.	Idaho	23.9
21.	South Dakota	23.0
22.	Kentucky	22.9
23.	Virginia	21.8
24.	Maryland	21.5
25.	Georgia	21.3
26.	Florida	20.9
27.	Delaware	19.6
28.	West Virginia	18.9
29.	Texas	17.8
30.	Alaska	17.1
31.	Alabama	16.6
32.	Arkansas	16.5
33.	Wisconsin	16.4
34.	Louisiana	15.7
35.	Oklahoma	15.6
36.	Kansas	15.2
37.	Michigan	14.3
38.	Oregon	13.4
39.	Minnesota	13.2
40.	Colorado	12.9
41.	Washington	12.4
42.	California	12.1
43.	Mississippi	12.0
44.	Hawaii	9.6
45.	Montana	7.8
46.	New Mexico	7.3
47.	North Dakota	4.3
48.	Arizona	2.3
49.	Nevada	.5
50.	Wyoming	---

Average 26.01

TABLE 4

Combined State and Local Appropriations for Higher Education Per $1000 of Per Capita Personal Income--1970-1971

	State	Appropriations Per $1000 Income
1.	Mississippi	$20.19
2.	Wisconsin	19.15
3.	Wyoming	18.87
4.	Arizona	18.12
5.	Hawaii	17.91
6.	North Dakota	15.39
7.	Idaho	15.25
8.	Alaska	14.90
9.	California	14.67
10.	Utah	14.33
11.	New Mexico	14.29
12.	Washington	14.09
13.	Colorado	14.01
14.	North Carolina	13.81
15.	Oregon	13.70
16.	Montana	13.65
17.	Kentucky	13.59
18.	West Virginia	13.10
19.	Louisiana	12.84
20.	Kansas	11.94
21.	Michigan	11.91
22.	Illinois	11.83
23.	Maryland	11.64
24.	New York	11.57
25.	Iowa	11.40
26.	Minnesota	$11.15
27.	Texas	11.08
28.	Georgia	10.85
29.	Alabama	10.82
30.	Florida	10.49
31.	South Dakota	10.40
32.	Indiana	10.20
33.	Tennessee	10.08
34.	South Carolina	10.02
35.	Vermont	9.99
36.	Missouri	9.78
37.	Delaware	9.67
38.	Arkansas	9.66
39.	Maine	9.51
40.	Nebraska	9.42
41.	Virginia	9.37
42.	Oklahoma	9.30
43.	Ohio	8.45
44.	Rhode Island	8.43
45.	Nevada	8.22
46.	Pennsylvania	7.79
47.	Connecticut	7.50
48.	New Jersey	6.53
49.	Massachusetts	5.25
50.	New Hampshire	4.75

Average $11.34

Table 5

STATE GENERAL FUND EXPENDITURES – HIGHER EDUCATION Vs. TOTAL$^{(C)}$

($-million)

	General Tax Revenue	Total General Fund Expenditure (GFE)	Expend. for Univ. & State Colleges	% of GFE	Expend. for Comm. Coll.	% of GFE	Total Expend. for$^{(B)}$ Higher Education	% of General Fund Expenditures
63–65	1,017.9	1,015.0	120.8	[11.9]	20.6	[2.0]	141.4	13.9
65–67	1,321.9	1,182.0	160.5	[13.6]	29.4	[2.5]	189.9	16.1
67–69	1,685.3	1,646.7	209.4	[12.7]	65.7	[4.0]	275.1	16.7
69–71$^{(A)}$ (Estimated)	2,124.6	2,247.9	280.9	[12.5]	100.9	[4.5]	381.8	17.0
71–73 (Appropriations)	2,351.1	2,360.0	271.4	[11.5]	119.4	[5.0]	390.8	16.5

(A) These figures represent estimated expenditures at the end of the 1971 legislative session. Supplemental Requests presented to the 1972 Special Session of the Legislature have not been included.

(B) Includes the following amounts for Capital Expenditure:

63–65	65–67	67–69	69–71	71–73
.3	.6	3.7	4.8	.4

(C) Excludes expenditures from restricted funds and local agency funds.

SOURCE: State of Washington Budget, 1971–1973 Fiscal Biennium, Olympia, Wash., Jan., 1971 as quoted in Pocket Data Book, p. 190 and Commission on Higher Education staff figure for Capital amounts.

SOURCES - APPENDIX 1 TABLES

TABLE 1

1. Chambers, M.M., "Appropriations of State Tax Funds for Operating Expenses of Higher Education, 1970-71", Office of Institutional Research, National Association of Land Grant Colleges, One Dupont Circle, N.W., Washington, D.C.
2. U.S. Department of Commerce, "Governmental Finances in 1969-70", September 1971.
3. U.S. Department of Commerce, "Governmental Finances in 1970", July 1971.
4. U.S. Department of Health, Education and Welfare, "Opening Fall Enrollment in Higher Education, 1970, Report on Preliminary Survey", USOE No. 54003-68, 1969.

TABLE 2

1. U.S. Department of Health, Education and Welfare, "Opening Fall Enrollment in Higher Education, 1970, Report on Preliminary Survey", USOE No. 54003-68, 1969.
2. U.S. Department of Commerce, "Population Estimates and Projections", Series P-25, No. 468, October 5, 1971.

TABLE 3

1. U.S. Department of Health, Education, and Welfare, "Opening Fall Enrollment in Higher Education, 1970, Report on Preliminary Survey", USOE No. 54003-68, 1969.

TABLE 4

1. Chambers, M.M., "Appropriations of State Tax Funds for Operating Expenses of Higher Education, 1970-71", Office of Institutional Research, National Association of Land Grant Colleges, One Dupont Circle, N.W., Washington, D.C.
2. U.S. Department of Commerce, "Governmental Finances in 1969-70", September 1971.
3. U.S. Department of Commerce, "Governmental Finances in 1 1970", July 1971.
4. U.S. Department of Commerce, "Population Estimates and Projections", Series P-25, No. 468, October 5, 1971.
5. U.S. Department of Commerce, "Survey of Current Business", August 1971.

APPENDIX 2: THE FEDERAL ROLE

In order to assess the future role of the federal government in financing post-secondary education we interviewed a number of government officials and educational leaders in Washington D.C., and analyzed federal legislation and programs. From this exercise one thing came clear: The "Education Ammendments of 1972", the higher education bill passed by the Congress this Spring and signed by President Nixon on June 23rd., is the most significant legislation of its type ever enacted. The future federal role is almost entirely bound up in its provisions. But before it can have important impact on state educational systems, two things must happen: Guidelines must be developed, and funds must be appropriated. The former is underway as this report is completed; the latter remains for Congressional action. The following summary of expected effects concentrates on segments of the legislation that are likely to have major significance for the state of Washington:

1. State higher education commissions will grow in importance. The new legislation calls for increased emphasis on statewide planning.

2. Beneficiaries of federal dollars will have to demonstrate that these funds have been effectively used before additional amounts will be provided.

3. Although the total amounts authorized are very large, the sums earmarked for institutions (as contrasted with funds for students) are not going to make much real difference.

4. The major emphasis of this new legislation is on student support. The $1400 basic grant to all students qualifying under need formulae reverses the institutional support emphasis of recent decades. Together with the extension of existing grant programs for the disadvantaged, this basic grant means that needy students may be entitled to federal funds of up to $2400. The effect of such support is considered in the report.

5. New institutional support will be directed primarily toward occupational education, and those developing institutions enrolling sizeable numbers of disadvantaged students.

6. Matching funds of up to 50% are provided to supplement state student grant programs.

7. Support is provided for state loan programs (see chapter 5 of the body of this report).

8. Special provisions authorize support for Vietnam veterans and supplements for institutions enrolling them.

9. The bill is so encompassing that many flaws have been perceived, and major changes can be expected in the next few years.

10. Money authorizations in the bill total $16 to $19 billion for the three fiscal years ending in 1975. This contrasts with appropriations for higher education totalling $1.3 billion last year. It is highly unlikely that the bill will be fully funded. If there is a shortfall as seems almost certain in the first year, the amount of the individual basic student grants (4.above) will be cut in accordance with a fixed formula.

In summary, it is unlikely that the pattern of federal contributions to higher education institutions will change markedly. The big change, which will be felt when funding levels begin to approach the authorization levels in the law, will be a large increase in direct support to students who can demonstrate financial need.

APPENDIX 3: EXPECTED SUPPORT FROM PHILANTHROPY

In order to assess the likely place of philanthropy in the financing of post-secondary education in the coming years we asked W. Homer Turner, Vice President of the Academy for Educational Development and formerly head of the U.S. Steel Foundation, to assess the prospects for institutions in the State of Washington. Dr. Turner, who is a lawyer, economist and political scientist, has long been a leader in philanthropic circles. Following are quotations and digests from his analysis covering in sequence the role of the great national foundations, corporate foundations and Washington foundations. First we quote his observations on the prospects for the State and some data on the size and shape of philanthropy as a whole:

-- The prospect for expanded philanthropic grants in support of higher education in Washington is a limited one.

-- The dollar amount of recent assistance from the private sector-individuals, foundations, religious orders, corporations - does not now, and will not in the future, constitute a major role in meeting the basic financial needs of Washington educational institutions.

-- The growing costs of Washington higher education, and the widening gap between total needs and total resources (after allowing for administrative and structural reorganizations which might produce certain economies as well as educational improvements), clearly point to the essentiality of enlarged public sector (taxpayer) outlays for colleges, institutes and universities. And without such added provisions - locally via the state and via Federal programs - Washington will fall behind in the race for maximum manpower and womanpower development with numerous adverse social and individual consequences.

The Pattern of Philanthropy

Philanthropy in the U.S.A. totaled $19.4 billion in 1970 (per January 1972 data). Of this, $14.3 billion was provided by individuals, $1.9 billion by all types of foundations (some 17,000 or so), $1.0 billion by corporations and $2.2 billion through bequests and related forms. Annual increment in total philanthropy is about $1.0 billion - fluctuating with GNP and the business cycle.

Religion receives the largest share of the $19.4 billion, getting an allocation of $8.3 billion of the 1970 total. Education (all types, all levels) received in the same year $3.1 billion - being exceeded by health causes ($3.2 billion) which continues to erode the earlier long-term growth trend of aid-to-education. Welfare received $1.4 billion, civic and cultural (expanding rapidly) received $1.2 billion, with all other causes (a vast group of tens of thousands of "social needs") receiving $2.2 billion. (See Exhibit 1960-1970 Trend by Categories on the following page).

National Foundations

The great general national welfare foundations, as well as many of the hundreds of major special purpose foundations are --

1. Realigning their programs generally.

2. Aiding education on "multiplier concepts" (e.g. with black institutions).

3. De-emphasizing certain historic forms of aid to higher education and emphasizing new types of professional and community needs.

All are feeling the effects of the 1969 tax law reforms - virtually a five percent across the board cut in total grants.

It is extremely unlikely that the dozen or so great foundations (including the sole, large newly-created one, The Johnson Foundation) will respond to state-related appeals for financing the general support of higher education.

Corporate Philanthropy

Corporations are pursuing a more conservative policy with respect to amounts given away and as to the end purpose application of monies donated. Between 1969 and 1971, corporate profits increased by about nine billion dollars, but corporate giving remained unchanged. Giving amounted to 1.2 per cent of pretax earnings, against the 5 per cent maximum tax credit allowed.

AMERICAN PHILANTHROPY
(In Millions of Dollars)

ITEM	1960	1966	1967	1968	1969	1970
Total	$8,912	$13,894	$14,774	$16,805	$18,557	$19,400
SOURCE						
Individuals	7,150	10,530	11,144	12,600	13,600	14,300
Foundations	710	1,250	1,400	1,600	1,800	1,900
Business Corporations	482	805	830	1,005	1,027	1,000
Charitable bequests	570	1,309	1,400	1,600	2,130	2,200
ALLOCATION						
Religion	4,545	6,690	6,839	7,500	8,000	8,300
Education	1,426	2,370	2,500	2,750	3,000	3,100
Welfare	1,337	808	931	1,100	1,300	1,400
Health	1,070	2,509	2,610	2,750	2,950	3,200
Foundations	356	(2)	(2)			
Civic and Cultural Activities	(2)	558	621	900	1,100	1,200
Other	178	959	1,273	1,805	2,207	2,200

After experiencing steady increases year after year for many years, 1969 support by corporations for education and other social needs leveled off and has continued on plateau to the present time.

Justifying aid-to-education grants while workers are being laid off and corporate books show recession losses is difficult for corporate managers.

Beyond the economic slump there is a trend away from support of educational institutions to "project-oriented," "demonstrable" support of numerous causes related to the inner city. These include neighborhood health centers, drug-rehabilitation units, art exhibits and symphony orchestras. Stated differently, priority consideration goes to causes dealing with social unrest and welfare and cultural enrichment. Corporations in recent years have provided $6 million in Minneapolis, $5 million in Cleveland and $3 million in Los Angeles for symphony orchestras alone. One corporation has provided one million for TV dramas; others have provided large sums for museums and art exhibits.

In short, the pattern is:

- Increased competition for the corporate philanthropic dollar
- Diminished stockpiling of dollars available for philanthropy
- Welfare, health and culture get the largest share of dollar grants.

There are exceptions, of course. For example, unlike the experience of the country generally, record-breaking corporate assistance for The United Way was given for the campaign effort in Seattle - despite industrial layoffs and poor local business conditions.

Washington Foundations

These number (the significant ones) forty-three. The peak appears to be past as to the creation of new area foundations, as the following table reveals.

Chronology of Establishment of Foundations in Washington

Year Founded	Number
1915-30	2
1940's	11
1950's	23
1960-66	7
1967-72	None

These forty three foundations had (in 1970-71) assets of about $68.0 million and made grants of nearly $6.6 million. About a dozen of the 43 have a definite interest in higher education, giving not over $3.0 or $4.0 million for scholarships and direct grants, of which one or two corporate foundations provided the bulk of the aid total.

Much of the grant request attention of foundations in the State is directed to religious-sponsored institutions.

Available data indicate that assets added last year barely replaced grants made to all causes - hence area foundations do not appear to be a major source for added support of higher education.

The following table summarizes corporate gifts to the principal private institutions in the State of Washington in recent years:

CORPORATE GIFTS TO EIGHT PRIVATE COLLEGES IN STATE OF WASHINGTON

Period	No. Gifts	$ Total	Avg. Gift
1954 - 1966 (Annual Avg.)	125	$ 136,400	$1,089.32
1967	214	264,365	1,235.35
1968	226	296,450	1,311.73
1969	195	291,725	1,496.03
1970	188	327,280	1,740.85
1971	186	335,633	1,804.48
TOTAL	2,637	$3,288,871	$1,247.20
Long Term Goal Yearly	300	$ 500,000	

APPENDIX 4: PRODUCTIVITY

> Increasing productivity is not, of course, a device for financing higher education. But it is an important element in a broad, cooperative effort to resolve the present cost squeeze. Thus we include as an appendix this brief review of some of the problems and opportunities in this area.

Since the beginning of the industrial revolution, productivity and income - the determinants of the standard of living - have risen steadily as a greater portion of the productive burden has been shifted onto machines and improved organizational forms. The output per man day in manufacturing, transportation, distribution, and many other fields has increased as a result of new techniques and technologies.

Such gains have not been shared equally. Endeavors which continue to be labor-intensive, and thus fail to share in productivity increases, include those which cannot, or at least do not, make major use of new methods. Education, which expends about 80 percent of its revenues in salaries and wages, is among those fields which have not undergone major change. In fact the last major change in educational methods goes back well beyond the industrial revolution to the invention of moveable type and printing press. These developments made it possible to transmit knowledge without reliance on personal contact. It meant the lecture system, devised so that students could copy down in their notebooks the wisdom that their professors had amassed in their own handwritten books, could be abandoned in favor of more productive uses of faculty time. Yet the lecture system has persisted in higher education, and the adoption of other methods that might increase faculty productivity has lagged.

The state, as the principal funding source, can provide inducements for changes that will increase productivity. But in order to be effective, such changes must be devised and accepted by faculties and other institutional personnel. In a paper urging faculty initiative toward increasing productivity, Richard N. Farmer points up some of the dilemmas.* He notes that successful manufacturing industries, through effective use of automation and improved management methods, increase their manpower efficiency by amounts greater than the average income growth, which now is about 4 percent per year. "But string quartets, education, baseball teams and numerous other personal services either increase efficiency much more slowly, or not at all. The limit is reached by a string quartet, which requires exactly the same number of man-hours to produce its services as it did in 1750. There is no efficiency gain at all."

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* Farmer, Richard N., "University Management" Economic and Business Bulletin. Farmer draws extensively on the writing of William J. Baumol, especially his "Macroeconomics of Unbalanced Growth: The Anatomy of the Urban Crisis", American Economic Review, June 1967.

Education is not in the same fix as string quartets. There are opportunities to improve productivity in education, but they have been slow to evolve and to spread.

During the first half of the twentieth century, higher education resolved the problem of low productivity in the face of rising prices by holding down faculty salaries. Professors slipped drastically on the comparative pay scale. Then after World War II colleges and universities underwent a period of rapid growth and strong public support, nurtured by a new reverence for the power of technical advances coming out of the world of learning. Faculty salaries were increased to meet the competition for brainpower. And problems of inefficiency were buried under the ever-rising funds provided by approving legislatures and philanthropies.

Now all of this seems to be ending. New methods must be found if faculty and students are not both going to suffer; the one through lower real salaries and continually rising work demands, and the other through lowered quality. This need for improvement is not confined simply to solving a current problem, but it is necessary if higher education is to stay abreast of rising productivity, rising wages, and rising costs in the rest of the economy.

Among the opportunities to reduce cost of instruction while maintaining or even increasing quality is extensive use of technological aids (television, film, recorded sound, computers, programmed learning) in skill courses, or in segments of comprehensive courses that are essentially skill acquisition or simple absorption of factual material.* An example is the use of videotape in teaching accounting at Colorado State University, now in its seventh year of use. It has permitted a reduction of six full time faculty members; learning has been excellent, as evidenced by the fact that CSU students performed substantially better than a national sample on a standardized accounting examination (scoring an average of 83 on a standard curve on which 50 is the national norm). Similar methods can be developed, or adapted from other sources, in many areas of mathematics and science, language study, and even in introductory portions of "soft" subjects such as literature and philosophy. Not only can savings be made, but in a generation that has spent much more time in front of a television screen than in a classroom, we might achieve better and more consistent preparation for advanced work.

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* See The Fourth Revolution - Instructional Technology in Higher Education (June, 1972), a report of the Carnegie Commission on Higher Education for a concise, thorough review of current uses of technology.

Another opportunity for reducing costs exists in encouraging independent and off-campus work through carefully organized external or "open university" types of programs featuring self-paced work, credit by examination and credit for work experience, etc. But a caveat is in order: The basic purpose of such outreach programs is to serve populations not now benefitting from the system, and should not be viewed exclusively as a way to save money. Some savings can be realized from them, but if quality is to be maintained, more will have to be expended on counseling, individual tutorial work, and other efforts to replace the educational effect of the usual on-campus experience.

Another device for reducing costs while maintaining quality is to increase institutional cooperation and the freedom of students to move from institution to institution. Faculty members too might divide their time among institutions. Such arrangements would facilitate elimination of marginal programs at some colleges, concentrating specialized work at just a few locations, with consequent savings in faculty, library, and facilities expense.*

An important way to improve faculty output which faculty members would welcome is through an increase in faculty support services. Nothing is more wasteful than forcing a $15,000 per year professor to do his own typing or computation or even routine test correcting. Such inefficiencies are chronic at most institutions, and a small investment in support services can yield a large return in productivity. Elsewhere in this report we discuss the value of a State supported work-study program to expand students' opportunities to earn more of the cost of their education. Creating work-study jobs in faculty support services would not only free faculty time to do the things they do best, but would create new links between students and professors, and provide meaningful work experience for students. Such jobs would also satisfy the work-study criterion of creating new employment positions rather than displacing present employees.

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* We would like to comment on a much-discussed plan which many look to as a cost-saver: the three-year degree. Although we have no quarrel with the educational merits of time flexibility in higher education programs, we see little reason to expect major economic benefits in a mass speed-up of college work alone. Shortened programs would require the same amount of faculty input, the same facilities (unless someone discovers the magic key to year-round campus use), and reduced student employment opportunities and consequently greater reliance on student aid. Shortening the years to a degree would reduce the student's cost in foregone income, but it would also have the effect of dumping students on an already crowded employment market at an accelerated rate.

These are but a few examples of areas in which productive innovations should be explored. But such innovations will not be brought about by exhortation. Tangible incentives will be required. We would urge as a top priority the establishment of a fund, separate from institutional general fund appropriations, to support innovative experiments and development work directed toward increasing instructional productivity. Such a fund could be dispensed as grants to support the best proposals submitted each year, as determined by a qualified state-wide panel. Competition can stimulate imaginative ideas, and inclusion of private institutions among those eligible for grants or development contracts would provide added stimulus to this kind of innovation.

Another requirement for increasing productivity is to have complete and realistic information on the costs and outputs of all programs. We are skeptical of systems that rely entirely on the ability to quantify the outputs of higher education. Some of the outputs are subtle, and more amenable to intuitive judgment than to counting. There is danger of being enslaved by a wholly quantified analytic system, abdicating managerial judgment to a machine. One leading authority, Dr. Thomas C. Shelling of Harvard, has warned that one such analytic procedure, Program Planning and Budgeting System, is a procedure ..."whose worth depends on the skill and wisdom of the people who use it" and that "quantitative data can be subtly made prominent to the detriment of important qualitative considerations."* Nevertheless we believe it is important to develop systems capable of analyzing program costs and outputs as a supplement to human judgment. Whether based on comprehensive Program Planning and Budgeting Systems being developed at a number of institutions or on analytic systems making use of present accounting practices, they should be looked upon as tools to help assess programs, to establish priorities, and to pinpoint needs at the institutional and state-wide level. They must, therefore, yield reliable and comparable data.

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* Quoted by Arthur M. Ross in "The Data Game," Inside the System: A Washington Monthly Reader, New York: Praeger Publishing, 1970, p. 268. Dr. Ross served as commissioner of the U.S. Bureau of Labor Statistics from 1965-68.

Increasing productivity, by knowing what we want to do, knowing how well we are doing these things, and finding ways to do them better, is an obvious and attractive way to lessen the present financial squeeze. It cannot do the job alone, nor will its benefits be immediate. Nevertheless it is an essential step if, in the long run, higher education costs are to be kept in line with those in other segments of the economic and social system.

APPENDIX 5: THEORETICAL ISSUES OF COST-BENEFIT ANALYSIS

In this time of financial constraint for higher education, cost-benefit analysis has gained considerable importance as a method of more rational allocation of the nation's resources. Its primary goal is to evaluate as precisely as possible the benefits received from higher education (or any other public service) by various sectors of society--students, parents, state, local and federal governments--and correspondingly, the costs which each of these sectors actually bears.

Because of its particular theoretical origins, cost-benefit analysis is most exact when dealing with issues quantifiable in economic terms. It is dependent, therefore, upon a clearly understood set of goals, and a comparability of items which are being quantified. For example, Mary Bowman in the "Economics of Education"[1] has pointed out that in speaking of all higher education, one must generally assume that people with different skills (engineer, economist, historian, artist) tend to be interchangeable, as educated people, within the economy--and that therefore there is a way to speak of the benefits which society and these individuals gain by being educated. An example of such benefits would be higher lifetime income for the individual and higher tax receipts for the various governmental units.

However, cost-benefit analysis, particularly when it concerns itself with education, must also consider less easily quantifiable issues than lifetime income, and in fact it must treat issues that cannot be consistently related to higher education. In order to do this most rigorously, several economists have tried to develop separate categories in order to set off from one another those areas which remain more quantifiable (and also have a clear economic relationship to higher education) from those areas which do not. It is for this reason that in the following section we will speak of both direct and indirect costs and benefits.

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[1] Mary J. Bowman, "Economics of Education" in FINANCING HIGHER EDUCATION: ALTERNATIVES FOR THE FEDERAL GOVERNMENT, M.D. Orwid (ed.), The American College Testing Program: Iowa City, Iowa, 1971. p.66
She also points out that cost-benefit analysis assumes that conditions under which you base your costs will remain substantially the same, for example, if you assert that an engineer makes an average of $12,000 per year, you must be quite certain that you can depend on that salary outcome and the availability of a position if the state asks that he pay for his engineering education.

Direct costs and direct benefits tend to be those characteristics of higher education which can be realized in quantifiable monetary terms (in short, through money) and which can be directly attributed to a person either pursuing or completing some level of higher education. Indirect costs and benefits, on the other hand, have a less immediate relationship to higher education though they may in fact be more important to the individual or to society than those we call direct.

In what follows, we will try to show that the importance of those distinctions and of this analysis lies in the additional clarity which they may give a decision maker by providing an approximation of known costs and results for services,(like higher education) which in turn can yield an approximation of the financial and social burden being placed on various sectors.

COSTS

Within the current literature, the question of what should be considered the cost for (and thus the burden of) higher education has received considerable attention. Most authors agree that those items attributable to operating and capital costs for institutions of higher education, and the educational fees and personal maintenance costs of the student are definitely costs of higher education. However, considerable debate has ensued over whether or not income foregone by a student while attending school can be considered a cost to him for his education. We shall treat this issue in some detail in later sections of this appendix, but for now will consider it as an indirect cost.

Most authors have as well agreed that two key sectors incurring costs for higher education--the individual student/parent combination (Private sector)[2] and society/governmental units

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[2] The recent 18 year old majority rule on the national level may have significant effect on the view of student/parent as one combination for the purposes of higher education. It appears however, that for the near future, parental resources will continue to be considered when evaluating student financial need.

(social sector). In turn there is general agreement on those costs which are direct and those which are indirect.[3]

A. The costs accruing to the individual student/parent combination for higher education are thus:

   1. Direct costs consisting of actual cash outlay for:

      a. college tuition and fees
      b. books and supplies
      c. additional room, board, and transportation expenses. (These are costs which are over and above what a student might reasonably incur were he living at home instead of at school, or for the commuting student--the commuting expenses which he incurs.)[4]

   2. In addition to these direct costs, requiring actual cash outlay, higher education also requires that the student/parent combination bear indirect costs (also known as opportunity costs) which may not require an expenditure of money but which amount to money sacrificed. These are:

      a. foregone student income. (The income that a student would have obtained had he worked instead of attending school.)[5]

      b. foregone receipts from alternate uses of the money expended for higher education. (When parents bear the primary burden for supporting their offspring while pursuing education, the parents bear the burden of foregone receipts.)

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[3] This approach is discussed in the following works:
Roger E. Bolton, "The Economics and Public Financing of Higher Education: An Overview" in THE ECONOMICS AND FINANCING OF HIGHER EDUCATION IN THE UNITED STATES, A compendium of papers for the Joint Economic Commitee, Congress of the United States. Washington, D.C.: USGPO, 1969. p.27

W. Lee Hansen and Burton Weisbrod, BENEFITS, COSTS AND FINANCE OF PUBLIC HIGHER EDUCATION, Chicago: Markham Publishing Company, 1969. p.42

Theodore Schultz, "Resources for Higher Education: An Economist's View" in FINANCING HIGHER EDUCATION: ALTERNATIVES FOR THE FEDERAL GOVERNMENT, p.20

[4] See Howard R. Bowen, "Who Pays the Higher Education Bill" in FINANCING HIGHER EDUCATION: ALTERNATIVES FOR THE FEDERAL GOVERNMENT, p.284

Hansen and Weisbrod, IBID, p.42

B. The other major sector bearing costs, the social sector, has direct and indirect costs as follows:

1. Direct costs consisting of:

   a. governmental allocations for the operating expenses of institutions of higher education.[6]

   b. governmental allocations for capital construction in institutions of higher education.

   c. philanthropic contributions.

2. The indirect costs include:

   a. the loss of tax revenue from the student's foregone income.

   b. the loss of tax revenue from foregone government investments in other more financially rewarding sectors of the society. (Each government must decide which area of its responsibility it can adequately help. By giving money to higher education, it often must thereby choose not to give it to some other sector or service (such as health care, environmental control, welfare etc.) Likewise the funds could be invested in a more remunerative enterprise like power companies or utilities which conceivably repay the monies expended on them.)

BENEFITS

As noted previously, in the same way that costs are attributable to both the private and social sector, so too are benefits. However, in considering benefits, the quantifiable range of options is much less precise than that possible with costs. Because the benefits of education are seldom immediate, and furthermore, except for routinized steps on a salary scale, seldom directly understandable in the form of money received, the evaluation of these benefits has much to do with personal taste and the range of human possibilities. We can say, however, that given the current opinions in society today, certain benefits for the private and the social sector are most likely to occur as a consequence of an individual pursuing higher education.

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[6] For a description of this analysis see:
Bowen, IBID, p.284
Hansen and Weisbrod, IBID, p.42-44

A. The benefits accruing to the individual/parent combination are thus:

1. The direct benefit of increased lifetime earnings (These increased earnings are presumably due to the educated persons' greater productivity as a result of his education. However, despite the intuitive attractiveness of this proposition, there has been very little agreement on the actual dollar difference in lifetime income between the person with a college degree and the one without. Estimates of the difference have ranged from $208,000-$138,000 over a lifetime (H.P. Miller-1962), to $89,000 directly attributable to education, to the actual present value of increased income when viewed by the student as an investment--around $20,000.)[7]

2. The private indirect benefits which, like indirect costs, are not directly monetary, but are often important, include:

   a. the increased freedom of choice in job selection
   b. generally higher social status and mobility
   c. a greater chance for participation in public life--since the skills of a person with a higher education often suit him for life in the public arena
   d. the possibility for increased leisure

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[7] Bolton, IBID, p.28
Hansen and Weisbrod, IBID, p.18
H.P. Miller, "Income and Education: Does Education Pay Off?" in ECONOMICS OF HIGHER EDUCATION, S.J. Mushkin (ed.) U.S. Department of HEW, Washington, D.C.: USGPO, 1962. p.140
T. Schultz, THE ECONOMIC VALUE OF EDUCATION, New York: Columbia University Press, 1963. p.57-58

It should be pointed out that the increase in lifetime earnings, while on the average true for all college graduates, has wide variations. For example in 1959 while 50% of all male high school graduates had incomes exceeding $6,000 per year, 31% of all male college graduates had an annual income less than $6,000. Finally, it is worth noting that not all higher education is clearly so economically rewarding: "In the United States presently, specific advanced schooling, that is, in law, agriculture, business, engineering, medicine, dentistry, nutrition and technology...are predominantly investments in productive capabilities that effect earnings and accrue to the persons who acquire the schooling." (Schultz)

    e. the enjoyment of the college experience. (This particular benefit, also called a "consumption benefit", is often raised as a reason for not providing more subsidy to expensive private institutions which may not necessarily offer more educational quality but rather more luxurious surroundings.)[8]

B. The benefits accruing to the social sector because an individual has undertaken higher education consist of:

  1. Direct benefits in the form of monetary gain:

    a. from increased tax revenue from the educated citizen as a result of his higher income.
    b. from increased tax revenues from other sources, primarily business and other persons due to the productivity gains which educated individuals provide for everyone.[9]

  2. Indirect benefits, which though not necessarily pecuniary in nature, may constitute the most vital and important benefits. They include:

    a. improved quality of citizenship and community responsibility[10]
    b. improved equality of opportunity[11]
    c. the tendency of education to reduce welfare and other transfer payments such as unemployment compensation. (Both welfare and unemployment compensation, at present, are found predominantly among the less well educated segments of the population.)[12]

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[8] See Bolton, IBID, p.32

[9] Bowman has lumped together both of the above benefits and called them "The general increase in national income (or national economic growth) attributable to education." IBID. Several studies have attempted to measure the effect of schooling on economic growth. E.F. Denison maintains that schooling has a major effect on human productivity which in turn is a major source of economic growth. He estimates that 21% of the economic growth of the United States between 1929 and 1957 is attributable to schooling. See E.F. Denison, "The Sources of Economic Growth in the United States and the Alternatives Before Us," a paper for the Committee for Economic Development, New York, 1962. p.251-253.

[10] Hansen and Weisbrod, IBID, p.37
Bolton, IBID, p.38

[11] Bowen, IBID, p.284

[12] Bowen, "Finance and the Aims of American Higher Education", in FINANCING HIGHER EDUCATION: ALTERNATIVES FOR THE FEDERAL GOVERNMENT., p.168

d. the favorable effect of education on the quality of life--due in part to the research and discovery which are attributable to investigations undertaken by institutions of higher education[13]
e. the discovery of talent which otherwise might not have appeared were it not for the availability of higher education[14]

THE GENERAL DEBATE REGARDING SOCIAL OR INDIVIDUAL BENEFITS

A major issue dividing proponents of cost-benefit analysis is whether the society or the individual obtains greater benefits from higher education, and accordingly, who should bear the greater cost.

One group of authors claim that the benefits from higher education devolve primarily upon the individual in the form of both higher earnings and other non-monetary rewards. On this basis, they maintain that the subsidy to education provided by a governmental unit (local, state, or federal) in the form of tax forgiveness, financial aid or low tuition should be only that required to repay the benefits which the government gains from having educated individuals among its citizenry.[15]

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[13] Denison, IBID, p.251
Bolton, IBID, p.35 "One reason the benefits (of research) are external to the educated people responsible is that scientific discoveries of the most basic kind are not patentable, so that private profit cannot be protected..."

[14] Schultz, IBID, p.18
"This activity has important social benefits. In attempting instruction, groups of faculty and students together discover talents, but there is no practical way of compensating the students, especially the ones who turned out to have no talent, for their services in the endeavor. Subsidies are thus necessary to induce students to "try out" college so that society can uncover the talent of the ones who would not otherwise go to college. It may be that many of the discovered students will earn enough later in life to pay the full cost of their education, and enough that society feels they should pay the full cost....This has implications for a subsidy plan. Perhaps the freshman year should be more highly subsidized than later years. The problem may be viewed as one of reducing the risk to prospective students of spending money and time at college,... Society may well gain more in uncovering hidden talent than it loses in wasting resources on those who had no talent to be uncovered."

One of those strongly supporting this position is Milton Friedman, who views individuals as the principal beneficiaries of higher education in the form of undeniable increases in lifetime earnings and other personal benefits. While recognizing the benefits which society at large receives from all education, he feels that many of these gains are realized already in secondary school, so that it is mainly the individual student who benefits from further schooling. Therefore, Friedman asserts that the individual student, or his parent, should pay for his own higher education, either out of current or future earnings:..."every youngster, regardless of his parent's income, social position, residence, or race, (should) have the opportunity to get higher schooling--provided he is willing to pay for it either currently or out of the higher income the schooling will enable him to earn."[16]

Similarly, Theordore Schultz, while admitting several problems in evaluating the individual monetary benefits to be derived from education, asserts that these benefits are substantial. He claims, however, that they are misunderstood as long as the true cost of education is not known by the student:..."Academic entrepreneurship should be given a vastly better opportunity than is presently possible to allocate resources efficiently...the ideal price to students...should be neither more nor less than the real cost of producing these services."[17] Schultz claims that were education to be treated more directly as an investment in "human capital", decisions made by students regarding educational opportunities (such as the proper school, the proper degree program, and the number of years of education) would be more rationally made and likewise that the expenditure of the student's time and the nation's resources would be more fully appreciated. The implication of this position, for him, is that the present opportunities for students to finance their own studies, through loan markets, for example, will have to vastly improve--and that better information about the quality and price of higher education will have to be made available as well.

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[15] Bolton, IBID, p.23 The position is often put forth that instead of the society repaying the benefits which it receives from the educated persons, it is really inducing persons to engage in more education than they normally would undertake since they do not recover all the benefits from it. In short, "the traditional subsidy (in the form of low tuition) is best seen as a bribe...if the public does not commit itself in advance to pay part of the costs, it will not be able to get the benefits." Without some sort of subsidy then, it is feared that "individuals will underinvest in education--".

[16] M. Friedman, "The Higher Schooling in America," PUBLIC INTEREST, Spring 1968.

Lest it be misunderstood, these authors assert that there may indeed be substantial social benefits (for Friedman, improved citizenship and for Schultz, discovery of talent)[18] but that these benefits are hard to quantify and thus the current social subsidy to individuals (in the form of low tuition and other forms of reduced costs to students for their education) lacks adequate grounding in the economics of education.

On the basis of these positions, both men would support the raising of such educational costs as tuition to a level which more adequately reflects the actual cost of instruction. Their rationale is that only with full-cost tuition will the student have an adequate idea of the real cost of his education. And hence, knowing the real costs, he can then attempt to make a decision which treats education as an investment in himself. By analogy, however, if education is to be treated more strictly as an investment by the student, he must at the same time have sufficient opportunity for loans or comparable financial aid, just as other investment making organizations have. In the cases where a student was unable to obtain a loan on the private market (from banks, savings and loan associations, or credit unions) both authors would support the government opening up a capital market with generous provisions for loan qualifications.

In contrast to those who claim the primacy of private benefits from higher education, there are a number of authors who assert that it is society which benefits most from the presence of educated individuals--and therefore, that society ought to bear the burden of educating its citizens even if the benefits it receives are non-monetary in nature. Howard Bowen has given the most extensive taxonomy to date of the social benefits to be gained from education. He asserts that "...there are vast social benefits from higher education, and it is undoubtedly in the social interest to provide more instruction, research and public service than individuals or agencies would demand if they were required to pay the full cost."[19]

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[17] Schultz, IBID, p.33

[18] See footnote 14.

[19] Bowen, "Finance and the Aims of Higher Education," p.169. These benefits include many already noted under "indirect social benefits" such as "Improving the allocation of labor; "...improving citizenship"..."Contributing new ideas which improve business or governmental efficiency"...

Bowen's main argument is that economists tend to underrate the beneficial character of education for the society, primarily because they are unable to measure it exactly. He asserts as well that society, rather than paying as much as is often supposed for education, has allowed a considerable burden to fall upon the student and his parents primarily in the form of foregone income. Despite the fact that the average tuition charge at most public universities and colleges averages only 10-20% of the cost of instruction, the student/parent combination in fact is bearing "three-fourths of the total cost" of the student's education when his foregone income is included in the reckoning.[20]

Not only must the student bear the burden of foregone income, but also, according to Bowen, given the current structure of resource allocation, he faces considerable difficulty in obtaining loans and finance capital. In addition, the lack of accurate public knowledge about the quality of educational institutions and the paucity of proper educational counseling makes it imperative that state, local, and federal governments extend themselves further to aid the educational enterprise. In short, the educational "consumer" alone is not in a position to make a rational choice which benefits both himself and the society. For Bowen, society should maintain and in fact take on more of the burden of financing higher education through a continuation of low tuition at public institutions (most importantly at lower division public institutions), and through increased student aid to help overcome the burden of foregone income.[21]

M.M. Chambers likewise believes that the public should take a greater part in the support of higher education. He, however, bases his argument on the Jeffersonian tradition of free public education as a responsibility of the state to its citizens: "The individual may benefit from higher education... but his private gains are far outweighed by the gains that concurrently accrue to the whole society...This is the basic argument for free tax-supported public higher education. Its benefits extend to every citizen...hence its costs should be equitably apportioned to all by means of a tax system adjusted to economic conditions. In short, higher education is essentially a public function and a public obligation--not a private privilege or a private caprice...it is too important to the public to be left in any large measure to the vagaries of an unregulated private pricing system."[22]

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[20] Bowen, IBID, p.160

[21] Bowen, IBID, p. 165

[22] M.M. Chambers, "Higher Education: Who Pays? Who Gains?" in FINANCING HIGHER EDUCATION: ALTERNATIVES FOR THE FEDERAL GOVERNMENT. p. 167

Alice M. Rivlin, speaking primarily from the point of view of a Federal administrator, sees a necessity for increased federal support of higher education as a way of opening opportunities to lower income groups and as a potential means for a more equitable distribution of income to all.[23] The nation stands to gain many... "unmeasurable,...but nevertheless real, public benefits of higher education..." by providing further public subsidy. Such a subsidy would..." ensure greater production and consumption of higher education than would otherwise occur, that is to say it would extend further education to groups which have been previously excluded.[24] Since, as a recent study has indicated, "...the tendency for upper-income students to go to college is not much affected by the price of education while low-income students are far more sensitive to price," the Federal government can have a salutory effect on participation by supporting an educational aid structure such that the effective cost to low income students is minimal.[25]

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[23] A powerful extension of Rivlin's understanding of the benefits of education has been made in a study for the Senate Select Committee on Equal Educational Opportunity, by Henry Levin of Stanford University. In the preface he notes that "An inadequate education for a substantial portion of the population not only handicaps those persons who are undereducated, but also burdens society with reduced national income and government revenue as well as increased costs of crime and welfare."

1. The failure to attain a minimum of high school completion among the population of males 25-34 years of age in 1969 was estimated to cost the Nation:
    - $237 billion in income over the lifetime of these men; and,
    - $71 billion in foregone government revenues of which about $47 billion would have been added to the Federal Treasury and $24 billion to the coffers of State and local governments.
2. In contrast, the probably costs of having provided a minimum of high school completion for this group of men was estimated to be about $40 billion.
    - Thus, the sacrifice in national income from inadequate education among 25-34-year-old males was about $200 billion greater than the investment required to alleviate this condition.
    - Each dollar of social investment for this purpose would have generated about $6 of national income over the lifetime of this group of men.
    - The government revenues generated by this investment would have exceeded government expenditures by over $30 billion.

Henry M. Levin, "The Costs to the Nation of Inadequate Education" A report to the SELECT COMMITTEE ON EQUAL EDUCATIONAL OPPORTUNITY, U.S. SENATE: USGPO, February 1972.

Rivlin asserts that, even if the benefits to society are difficult to quantify, it is important for the Federal government to play an active role in supporting higher education since no smaller units, namely local and state governments, are in a position to recover all the benefits from educating their own citizens; "Small geographical areas tend to underfund a public service whose benefits spill over into other geographical areas. Since educated people migrate, individual states and communities have less incentive to provide higher education..." Further, as she notes, a commitment to equal educational opportunity is expensive and usually requires a strong tax base. Many states have been unable or unwilling to undertake such a commitment.[26]

In some contrast to all of the preceeding positions, W. Lee Hansen and Burton Weisbrod, rather than taking sides on the individual or social benefits of higher education, have made an attempt at applying a cost-benefit analysis to the higher educational structures of various states--notably California. Using data for the year 1965 compiled by the California State Legislative Analyst's Office, they attempted to calculate the direct, monetary benefits and costs of higher education in California and the distribution of each. Their efforts were directed at isolating those benefits and costs which could be directly measured, and with much qualification, estimating the monetary magnitude of the indirect costs and benefits.[27]

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[24] A.M. Rivlin and Jeffrey Weiss, "Social Goals and Federal Support of Higher Education--The Implications of Various Strategies," in THE ECONOMICS AND FINANCING OF HIGHER EDUCATION IN THE UNITED STATES. p.549

[25] U.S. Department of Health, Education and Welfare, FEDERAL FINANCIAL SUPPORT FOR HIGHER EDUCATION. "The Rivlin Report", Washington, D.C.: USGPO. 1969 p.21

[26] Rivlin, "Social Goals and Federal Support of Higher Education--" p.553

[27] Their method has received criticism from several people, chief among them J. Pechman. See Pechman, "The Distributional Effects of Public Higher Education in California," THE JOURNAL OF HUMAN RESOURCES, Vol. 3, 1970. p. 361

Hansen and Weisbrod used the distribution of parental income levels in the three segments of public higher education in California and compared this to the average educational subsidy received by each person attending these institutions. They then calculated the average tax burden for each income level of families both with and without children in the public system. By comparing projected increased lifetime earnings from a college education, and the increased tax revenue to local, state, and Federal governments, they were able to estimate the approximate total subsidy which was given by state and local governments to those attending public institutions of higher education and the burdens for supporting that subsidy.

Several tentative conclusions resulted from this California study: the present value of indirect social benefits (those non-monetary benefits accruing to society in general) would have to be..."three to five times the present value of taxes paid for each public college graduate (by that graduate)"... and "eight to twelve times...for those who attended college but didn't graduate," to monetarily justify the public expense.[28] In short, for 1965, the state and local governments of California contributed between $4,400 and $5,200 per male student for four years of college--they will have received from this same person in lifetime taxes an equivalent of approximately $1,000. They further sharpen this point by noting that, even when the tax contribution of the student's family during the period of his college attendance, his contribution to taxes while working in college, and the additional lifetime taxes he pays on account of income attributable to education are added together, the amount repaid to state and local governments falls short, on the average, of the educational subsidy received. Thus, the state and local governments, from this point of view, are paying a substantial amount for each person educated. It may in fact be that the advantages to a state of an educated citizenry is three to five times the amount that the state then receives from this student in additional taxes, however, Hansen and Weisbrod wish to suggest that there is a specific cost associated with the state's decision to educate its citizens in a certain manner.

Secondly, Hansen and Weisbrod found that relating the burden of taxes, increased income, and the different levels of state subsidy offered at various levels of education "Public subsidies for higher education in California tend to go disproportionately to students from relatively high income families..."[29] Not only did the highest educational subsidies go to university students who had on the average the highest parental income (and thus the greatest ability to pay) but the lowest state subsidy went tothe community colleges where average parental income (and thus the least ability to pay) was lowest. In addition, they found that almost 40% of the student age population received no subsidy whatsoever. This 40% included the substantial group of high school graduates who did not desire to invest in higher education and were thereby unable to take advantage of the state subsidy even though they payed for it indirectly. Hansen and Weisbrod suggest a possible proposal--that the state offer this group of people an equivalent grant..."for participation in a training or apprenticeship program outside the state's higher education system, for investment in a small business, or for some other use which--like higher education--would be regarded as an investment in future income."[30]

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[28] Hansen and Weisbrod, IBID, p.59

[29] IBID, p. 84

Finally, based on their subsidy and tax analysis, Hansen and Weisbrod point out that; "Through the local, state, and federal tax systems many people other than students benefit financially from the increased incomes generally received by college educated persons. But because of the population mobility process, these benefits do not always accrue to the taxing unit that subsidizes the education, These circumstances--both migration and the presence of a federal system ..." which is progressively geared to income and nationally effective..."provide justification for increased federal support for higher education."[31]

It is important to point out that Hansen and Weisbrod concluded that a total cost-benefit picture of California could not be developed without understanding all other forms of public service (unemployment, welfare, police, fire, etc.) and that..."a broader analysis is needed of the distribution of the benefits from the full range of government programs." They assert however that their basic findings still hold true given that higher educational support represents..."one of California's major expenditure programs." They observe that in California with perhaps the widest enrollment access through its community colleges of any state in the nation, and with a progressive income tax, there was still regressivity in the allocation of the benefits of higher education to those who have borne the burden of financing that education.[32] It suggests that other states with less than these conditions, such as the lack of a graduated income tax, might well find an even more regressive pattern.[33]

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[30] IBID.

[31] IBID.

Shortly after Hansen and Weisbrod's book appeared detailing the results of their California study, several authors attempted to refute their "key" conclusion that the effect of public subsidy to education in California was in fact regressive--the poor were paying for services which they seldom used and which in fact were being used by the middle and upper income groups. It should be noted that the results do not necessarily mean that the poor are paying for the rich overall (when one considers other services). It means, simply, that the lower income groups are receiving the smallest subsidy from the public higher educational system. If in fact a goal of the public higher educational system is to readjust the income distribution within the state, or barring that to not aggravate existing inequities --such as an outcome (i.e. the lowest subsidy to the poor) would seem inconsistent.

Joseph Pechman of the Brookings Institution suggests that Hansen and Weisbrod's judgment of the California situation is hasty in that when the benefits of public higher education are considered over an entire income range, the lower income groups in fact receive more education benefits(dollar wise) than they pay out in taxes.[34] Pechman's results are derived by comparing the amount of total taxes dedicated to higher education with the tax burden by income class. His figures result from averaging all the higher education subsidies together and separating the recipients by income class.

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[32] Hansen and Weisbrod suggest that with such a pattern,... "Either a change in the state and local tax structure-- to make it more progressive--or a change in the system of user charges for higher education--to charge on the basis of ability to pay, and where necessary, to provide generous supplements to low income students--seems called for." p.86

[33] Using a slightly altered method (namely, considering family income distribution throughout the state) D.M. Windham obtained data from Florida revealing a tax structure in which... "for families with incomes below $10,000 the benefits of higher education..were negative, and for families above $10,000 they were positive." Quoted in FINANCING HIGHER EDUCATION: THE ALTERNATIVES FOR THE FEDERAL GOVERNMENT, p.339
See also Windham, EDUCATION, EQUALITY AND INCOME REDISTRIBUTION, Lexington, Mass: D.C. Heath and Company, 1970. p.51

[34] "The taxes actually paid in the lowest income classes for public higher education in California are smaller than the (continued on next page)

But Hansen and Weisbrod assert that one cannot average the higher education subsidy together since the subsidy a student receives is dependent upon the type of public institution he attends.[35] In short, they assert that while the poor pay a large total tax bill, they are grouped in the public higher educational institutions which offer the least total subsidy return. Some of their taxes are therefore going to support other higher institutions which they are not attending. The question is one of averaging. From the point of view of income, a few lower income students may be benefiting greatly from attending the highest cost institution, (the University of California), but the majority of students in the lower income category are attending the lowest cost institutions, the community colleges, and not receiving the same level of subsidy as wealthier persons who can most afford to pay for their education.

From the point of view then of cost-benefit analysis, the key questions for a state remain: having carefully defined the costs which it is now supporting, the costs which it is asking the parent/student combination to bear, and further, the benefits which each is deriving, a) does the state feel impelled to pay for those benefits which could best be called monetarily unrealizable or unmeasurable--an educated citizenry, the possibility of increased economic growth from educated individuals, and other indirect social benefits? If, in terms of political decisions the answer is yes, then b) does the state also feel compelled to pay for these costs even if an individual will undertake higher education without any extra subsidy. In short, does the state wish to subsidize those who, on the basis of income and motivation, have no need of added financial support (either in the form of low tuition or scholarship)? If the answer to this latter question is yes, then the state must evaluate the extent to which any subsidy to higher education can most efficiently be used towards meeting the total costs of obtaining higher education.

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[34] (continued)
benefits received by families in these same classes."
Joseph Pechman, "The Distributional Effects of Public Higher Education in California" THE JOURNAL OF HUMAN RESOURCES, Vol. 3, Summer 1970, p. 364

[35] "...the magnitude of higher education subsidy received depends primarily on the system attended rather than directly on family income."
W. Lee Hansen and Burton Weisbrod, "On the Distribution of Costs and Benefits of Public Higher Education: Reply" THE JOURNAL OF HUMAN RESOURCES. 1971. p. 367

At this juncture the viability of the concept of "foregone income" attains considerable importance, in that, in the interests of equality of opportunity, as well as the quality of education, some judgment should be made as to the incidence of higher education costs for all income levels. If indeed, as many have proposed, "foregone income" is a significant factor for lower and many middle income groups, then the way in which state support is provided for higher education will have a significant effect not only on access but on the effective tax and cost burden borne by the student/parent combination.[36] On this basis, subsidy in the form of zero tuition, or tuition waiver as a form of aid, (while perhaps at present most simple for the institutions) may be of little consequence in providing a level of access which could be called fully equal.

A BRIEF RECONSIDERATION

The above description of cost-benefit analysis may give a clearer picture of the advantages and limitations of this approach (long used in some form in considerations of public policy, and public taxation). However, it is worth summarizing some of the key limitations to cost-benefit analysis:

A. The difficulty of quantifying and weighing the importance of the non-monetary benefits received by either the private or social sector. These benefits depend heavily upon individual choice and preference on the one hand, and on political judgments (in the case of society at large) on the other.

B. In terms of projections for the future, cost-benefit analysis is only as good as the estimations of future income, taxes, and courses of action based on past experience and intuition.

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[36] See Bolton, IBID, p.32. It is important to note that with rising living and educational costs, the person receiving the least alternate transfer payments (welfare, social security, unemployment), at child bearing age, and spending the greater proportion of his income for consumer items (food, clothing, housing) may likely be bearing the most regressive tax burden. Several studies have suggested that this income range at present is the $7,000 to $10,000. In California the median income at junior colleges was $8,800--at this institutional level, the net subsidy was also the smallest.

C. Cost-benefit analysis depends on a certain degree of comparability of things, such as skill categories (historian, economist, engineer) or at least a comparability of goals in order to evaluate benefits on the basis of monetary criteria.

D. Without much more extensive analysis of the entire range of local, state and federal services (welfare, social security, unemployment, medical care) cost-benefit analysis will remain quite inexact in considering the entire range of benefits and the incidence of costs for the population. However, it would seem that with education (particularly higher education) which receives an increasing portion of governmental expenditures, a great disparity between the cost burden and the benefits of that education is inequitable.

Finally, we should end by noting some of the advantages which commend the discipline of cost-benefit analysis to most major governmental units:

A. Significantly, it is an attempt to relate the payment of funds to the eventual result of their use--this approach has attractiveness to those who find "accountability" to be an important aspect of public policy.

B. It provides some clarity in considering the ways in which monetary costs and benefits are in fact being allocated. One can certainly use more money than seems necessary when non-monetary considerations are uppermost, but without knowing in fact who is receiving the benefits of governmental expenditures, discussions about unmeasurable benefits remain in the realm of mere speculation.

C. It provides one approach to discovering just what proportion of a state's or nation's resources have actually been commited to education. To this extent, it can be more "rationally" understood how education is an investment in the welfare and productivity of the nation.

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